

# AUTOMOTIVE INDUSTRIES

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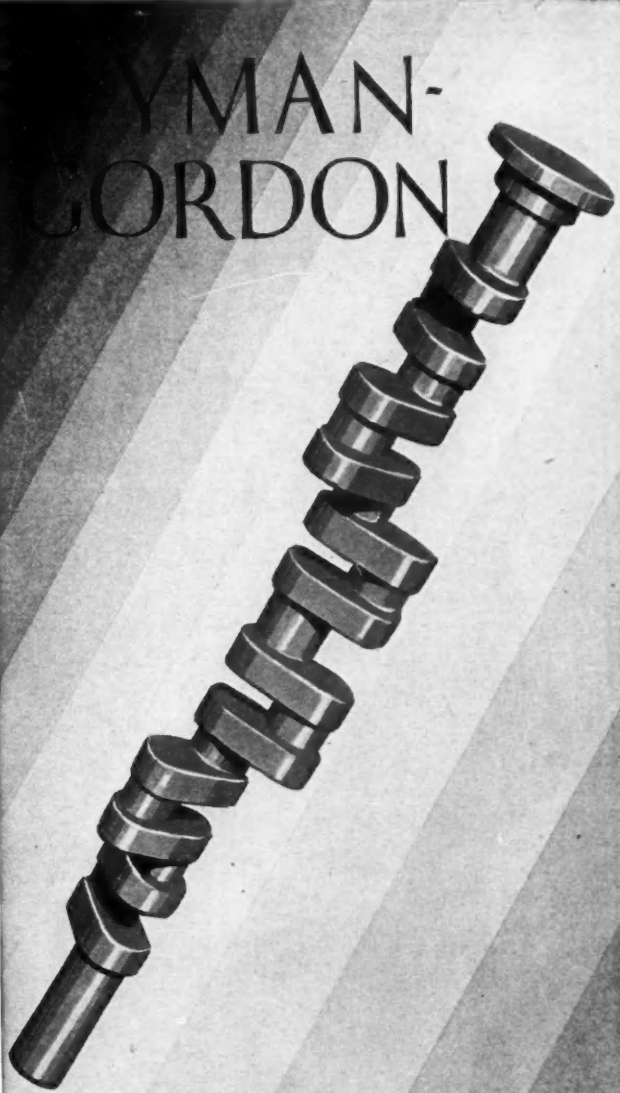
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Pat. Jan. 3, 1928

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# KANTLINK TRADE MARK SPRING LOCK WASHERS

**DO NOT TANGLE DO NOT RUST**

**THEY PAY THEIR ENTIRE COST IN TIME SAVED - SOMETIMES EVEN MORE**

# AUTOMOTIVE INDUSTRIES

VOLUME 62

Philadelphia, Saturday, January 11, 1930

NUMBER 2

## New York Show Reaches High Point in Number of Cars Exhibited

*Attendance at opening last Saturday was salutary in view of sentiment engendered by securities market slump. Dealer outlook considered favorable.*

By EARL O. EWAN

THE upward price trend of passenger cars that began last November and, with but one exception—the Ford decrease—up to the end of 1929, continued to dominate in the field of f.o.b. figures during the Thirtieth New York Show, which will close today. The tendency was somewhat less pronounced, however, as a result of the announcement during the week of several price reductions by several manufacturers.

The large attendance at the opening of the show last Saturday afternoon was considered most auspicious in view of the widespread thought, incurred by the stock market slump in November, that the public would endeavor to retrench in automobile transportation next year, what it was supposed to have lost in the securities' imbroglio of the closing months of 1929.

Among the decreases that became effective, probably none was accorded greater attention than those declared by Chevrolet. They ranged up to \$35. Jordan cut prices on certain models from \$100 to \$300, while Oakland figures went down from \$70 to \$125 and Pontiac \$10. The Hudson Super Eight was introduced at prices ranging from \$25 to \$350 less than those for which the Super Six were sold by the factory.

Among the companies that announced price in-

creases during the show were Elcar, ranging from \$100 to \$200; Essex from \$25 to \$190, and Packard, which raised the price on three body models \$110. It will be remembered that Studebaker initiated the price raising on last Nov. 1, and its move was followed by similar announcements in 1929 by several others, including Cadillac, LaSalle, Buick, Marquette, Nash and Chrysler.

The continuance of the upward price tendency was interpreted at the show as renewed assurance that car manufacturers will profit on the smaller production volumes estimated for this year. The apparent intention of manufacturers not to follow the lead of Ford in reducing dealer discount was taken as a very favorable factor in the dealer outlook.

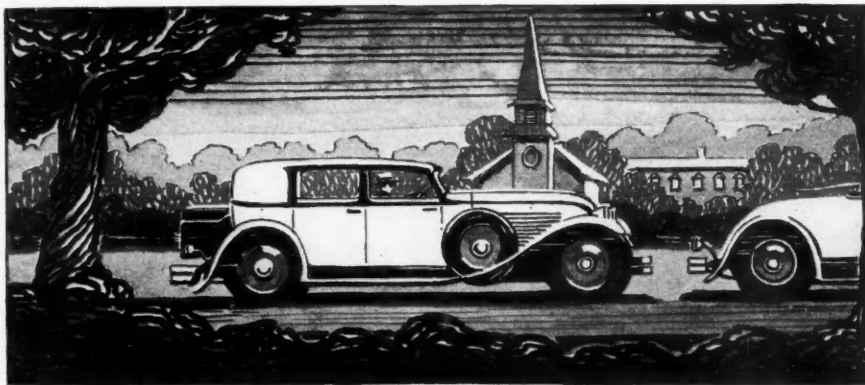
Forty-six makes of cars were exhibited at the show, which was held under the auspices of the National Automobile Chamber of Commerce with the cooperation of the Motor and Equipment Association. Only two foreign cars were displayed, the Mercedes-Benz and the Voisin. Two taxicabs, the Checker and the Yellow, also were shown. Accessories and shop equipment were exhibited on the third and fourth floors of the Grand Central Palace, where the show was held, by 180 manufacturers, 53 of whom displayed shop equipment exclusively. As in previous years, special

### BIG ENGINES LEAD

MORE power in 1930 has been demanded of automobile manufacturers. Larger cylinders, improved carburetion and cooling systems are features in many cars, but the predominance of the six-cylinder powerplant has been challenged by the increase in eights, both in-line and Vee eights reaching a total of 27 as compared with 24 sixes. The tabulation of new cars by cylinder numbers is as follows:

STRAIGHT EIGHTS	SIXES
Auburn	Auburn
Blackhawk	Blackhawk
Cord (FWD)	Buick
De Soto	Chevrolet
Dodge	Chrysler
Durant	Dodge
Elcar	Durant
Gardner	Elcar
Graham	Erskine
Hudson	Essex
Hupp	Franklin
Jordan	Gardner
Marmon	Gardner (FWD)
Nash	Graham
Packard	Hupp
Peerless	Marquette
Pierce-Arrow	Nash
Roosevelt	Oldsmobile
Ruxton (FWD)	Pontiac
Studebaker	Reo
Stutz	Studebaker
Windsor	Stutz
	Willys
	Windsor
V-EIGHTS	FOURS
Cadillac	Austin
La Salle	Ford
Lincoln	Plymouth
Oakland	Whippet
Viking	
V-16	
Cadillac	





showings were held by several manufacturers in most of the outstanding hotels in New York during the week. Ford showed his improved Model A at his New York headquarters, Broadway at Fifty-fourth Street, and in dealer showrooms throughout the country.

More new cars were exhibited at the 1930 New York show than at any previous exposition which has been held there in several years. This doubtless was due to the fact that excess production last summer by a number of manufacturers caused the accumulation of large stocks of cars, which made it necessary to delay the announcement of new models. More than half of all the manufacturers came out with new models at show time, which is unprecedented in recent years.

In addition to the numerous new chassis and body models that have been described in recent issues of *Automotive Industries* and which were exhibited at the New York show, two manufacturers displayed new chassis models and several showed new bodies. Jordan and Elcar had the new chassis, while additional bodies, not previously announced, were shown by Nash, Packard, Stutz, Lincoln, Studebaker and du Pont.

Chassis improvements seen at the show were noticeable particularly in braking systems, engine mountings, engine lubrication features and control arrangements. Undoubtedly the largest number of really new features were combined in the Cadillac V-16, which has been described in *Automotive Industries*. The trend toward four-speed transmissions was greatly emphasized.

While most models exhibited at the show presented a conventional appearance, there was a distinct improvement in frontal appearance and indications of better streamlining. Aside from an appearance point of view, bodies should be quieter and more durable because of better frame bracing.

Radiator shutters, grilles and V-type radiators, the latter attained through the use of special shaped radiator cores or shrouding with grille work, all aid in improving the appearance of the 1930 car. To assist in attaining the appearance of lowness and increased length, body belt lines are, in many cases, continued along the sides of the hood to the radiator shell. Another feature found in many cars is the slanting windshield, which not only improves appearance, but also reduces the glare from headlights, making driving safer. In this type of design, windshield pillars are often curved.

Improvements are also noted in the design of fenders, to reduce wind resistance and also decrease the splashing of mud on the sides of the body, the latter being ob-

tained by forming the edge of the fender into a channel and by carrying the lower edge of the back fenders closer to the ground.

Through the use of adjustable seats and steering columns, driving and riding positions are more comfortable. As adjustable seats do not brace the sides of the body, this design has necessitated better bracing for the sides of the body.

In most cases the darker shades are favored for exterior finish, lighter colors being used for the open cars. While convertible models were not exhibited as extensively as at the Salon show, this type of construction seems to be increasing in favor.

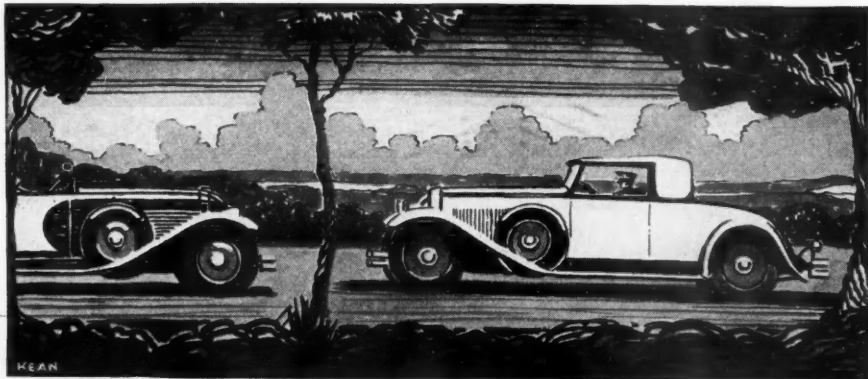
Not in many years have the third and fourth floors, where the accessory, parts and equipment men hold forth, exhibited the genuine optimism that was prevalent on the opening day.

"This year will be a maintenance year—*Our Year*"—were the assurances expressed by sales executives in booth after booth. The following remarks from one shop equipment manufacturer whose products enjoy wide use in the repair shops and in many automobile factories as well, were typical of the sentiments expressed by many others:

"We hope the boys on the first floor (car manufacturers) have another banner year. But, whether they do reach and exceed the record of 1929 or not, they have done a wonderful job of making the motor vehicle a part of the very fabric of modern social and commercial life. Motor vehicles, as necessities, will be sold in large quantities for replacement. Motor vehicles will be maintained, even at the expense of other elements of present-day higher living standards—and motor vehicle maintenance is *our* business."

Substantial proof of this attitude on the part of many of the accessory and shop equipment organizations particularly was evidenced in the distinctly utilitarian trends in the new products shown. While beauty was not sacrificed, accessories for the most part were of the kind that provide car operators with distinct advantages in the comfort and safety of driving. Equipment items featured most prominently were those which are likely to appeal to repair shop operators because of their effectiveness and economy when used in performing maintenance operations.

Attendance of wholesalers in the accessory sections was not large on the opening day, but this was to be expected in view of the fact that special trade days have been arranged for them in the shop equipment section, during which the public will be excluded.





# Chassis Changes in 1930 Models

## Stress Greater Power

*Engine accessories are neater in assembly, with more rubber used in mountings and greater attention paid to lubricating systems. Eights increase, with fewer fours shown.*

By P. M. HELDT

THERE are more new cars at the show this time than there have been for many a year. Record production last summer by a number of manufacturers led to the accumulation of stocks of cars, which necessitated delay in the announcement of new models, and more than half of all the manufacturers came out with new models at show time, which is quite unprecedented in recent years.

A review of the chassis at the show naturally reveals only changes that are visible from the outside. From an inspection of the show models on the opening day, it would seem that improvements have been made particularly in braking systems, engine mountings, engine lubrication features and control arrangements.

Eight-cylinder cars have increased materially in number, mostly in-line types, although Vee-eights have been added to as well. The elimination of the Durant four, further decreased the four-cylinder models.

Undoubtedly the largest number of really new features are combined in the Cadillac V-16, but since this car has been covered in two special articles in these columns, of which the last appears elsewhere in this issue, it may be passed by in this review.

Engines are being generally "cleaned up," an example being the Cadillac V-8, in which covers are placed over the valve pockets to inclose the spark plugs and their cables. This, together with a distributor from which the high-tension cables issue from the side,

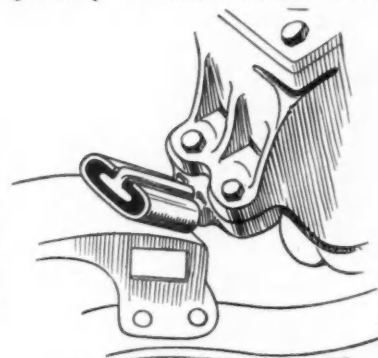
and with metallic cable conduits, leads to a very neat arrangement.

Counterweights on crankshafts are becoming increasingly popular, especially on cars which have relatively high engine speeds. In many cases the counterweights are forged integral with the crankshaft, as in the new Hudson eight. In the Hupp eight it was noticed that the cap screws which hold the weights in place are secured by welding.

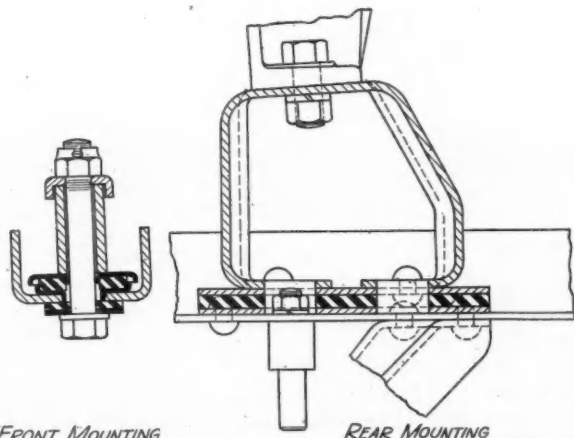
For some years past the tendency has been to decrease engine strokes. This is a natural consequence of the increase in cylinder numbers, with resultant trouble from torsional vibration. In former years, "long-stroke" was considered a mark of distinction for automotive engines, but recently manufacturers have begun to call attention to shortness of strokes. In the new Oakland the stroke is actually less than the bore ( $3\frac{3}{8}$  as compared with  $3\frac{7}{16}$  in.). Experiments in torsional vibration have shown that the length of stroke has a strong effect on the critical speeds of the engine. As the stroke comes down the critical speeds go up, and the natural desire is to bring the more important of these outside the engine-operating range.

At one time three rings on pistons had become almost the standard practice, but since then the narrow ( $\frac{1}{8}$ -in.) ring has been introduced and now many pistons are found with four rings again, of which usually one performs the function of an oil control ring.

In engine mountings on rubber there is a growing tendency to use the rubber in shear rather than in compression. When working in shear, any increase in load naturally results in an elongation of the rubber, and it is well known that for a certain quantity of the material much greater elastic effects can be obtained than when it is worked in compression. In arranging the mounting so as to cause the rubber to work in shear, heavy sheets of rubber are usually vulcanized to metal stampings. The design of the



Rubber mounting of the Oakland powerplant on frame cross-member



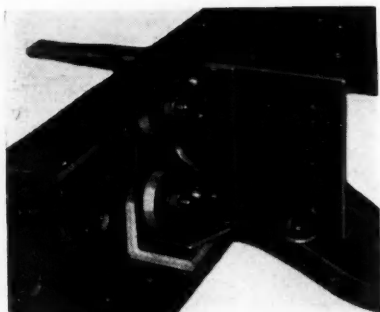
FRONT MOUNTING

REAR MOUNTING

Rubber engine mountings of the Willys Six, introduced at the New York Show

mountings for the engine on the new Willys Six is illustrated by one of the drawings herewith.

While on the subject of engine mounting, mention must be made of the unique mounting of the eight-cylinder V engine on the new Oakland. This has the older form of a single-plane, four-throw crankshaft. With such a crankshaft in a 90-degree V engine there is an unbalanced force in a horizontal plane, which tends to cause vibration. Now, vibration can be guarded against in two ways, either by neutralizing



*A detail of the rubber engine mounting on the Dynamic Erskine*

the forces which tend to cause it, or by damping the vibration members, and the latter method has been adopted in this case.

The Oakland power unit is supported at the rear on a compound cross member, composed of a lower member of channel section with the open side down, riveted to the lower flange of the frame-side rails, and two short members riveted to the upper flange of the side rails and to the flanges of the lower member just outside of the transmission case. To the upper members are bolted channel or clincher sections, filled with rubber, in which is supported a bracket to which a foot on the transmission case is bolted.

Emphasis is laid by a number of manufacturers on the fact that, in their engines, the oil is conducted to the various bearings through ducts drilled in the crankcase, and that no piping or tubing is used except possibly a suction tube for the pump.

With the increase in engine output trouble seems to have been experienced in the past from excessive heating of the crankcase oil, and measures to prevent it are being taken. Longitudinal cooling fins on the bottom of the oil pan have been a familiar feature in England, but are coming into extensive use here for the first time, and Hupp has gone a step further and divided off a section of the radiator core to serve as an oil cooler. A double gear-type pump is used, one section of the pump circulating the oil through the engine, the other effecting circulation through the cooler. Short lengths of flexible metallic hose are incorporated in the connections to and from the cooler.

A safety feature in connection with the engine lubrication systems is found in the new Pontiac. When the pressure in the lubrication system drops to zero, the ignition is automatically shut off so that no damage can be done. This is particularly likely to occur in extremely cold weather when the oil is congealed

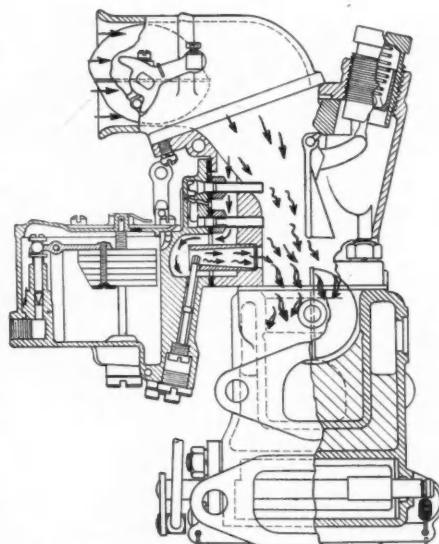
and cannot flow freely through the pump suction tube.

Hudson adheres to the circulating splash system of lubrication. Its system always has differed somewhat from the conventional design of this type in that the oil is circulated automatically from splash trough to splash trough. This year another improvement has been made by the introduction of a new type of double-acting piston pump in which the piston has both a reciprocating and an oscillating motion, the former for the displacement of the oil and the latter for performing the valve functions. This does away with the need for ball or other check valves, which are always the most delicate part of the plunger type of pump that is commonly used for splash lubrication, and it also provides oil flow in two directions, from front and rear toward the center, doubling the flow and providing a more positive supply.

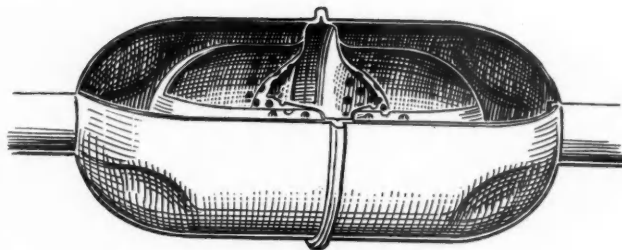
The number of eight-cylinder vertical engines has increased considerably. The newer cars in the eight-cylinder class are principally in the lower-priced class, and it was noted that most of these have five-bearing crankshafts, rather than nine-bearing. In the Willys Six, which supersedes a model with a seven-bearing crankshaft, four bearings are provided.

Progress is being made also in muffler design. It will be remembered that Chrysler about a year ago introduced a muffler in which, by opening a valve in a central tube passing entirely through the muffler, the exhaust could be given a straight passage into the atmosphere, its pressure being reduced on the way by the escape of some of the gas through perforations in the wall of the tube into the muffler chambers. A somewhat similar principle is made use of in the Burgess acoustic muffler employed on the Dynamic Erskine. This has a long unobstructed pipe with perforated wall which is surrounded by a jacket filled with steel wool.

The muffler employed on the Hudson and Essex is a very advantageous design from a production standpoint, and is shown in cutaway form on the show chassis. As shown by the sectional view



*Sectional view of the triple-nozzle Marvel carburetor on the 1930 Oakland Eight*



*Cutaway view of the Hudson-Essex muffler*

herewith, it consists of three pairs of deep drawings, the two inner pairs being perforated, while the outer pairs have the inlet and outlet pipes connected into the heads. All of the members are united by a single welded joint at the center.

Downdraft carburetors permit of placing the cleaners in a high position above the engine, for which the

advantages are claimed that the air generally is cleaner and purer there. On the De Soto a modified form of the well-known Air Maze cleaner is used, with a bell over it, so that air enters between the bottom of the cleaner proper and the lower, flaring edge of the bell. The cleaner has a metal shell with numerous small louvers of the small general shape as hood louvers in it, and the space between this shell and an inner shell or support of coarse-mesh, stiff wire screen is filled with a metalized material.

Four-speed transmissions are decidedly more numerous than at last year's show, and models with glass panels are shown in operation at a number of stands and can be operated by visitors.

A change in the rear axles of the Hudson and Dodge is that the bevel pinions are now offset from the center of the axle and the chassis frame. The object aimed at is to divide the differential bearing load substantially equally between the two bearings. With the usual design the bearing on the left side (near the ring gear) takes by far the greater part of the load. The construction referred to involves a slight increase in the average angularity at which the universal joints in the propeller shaft operate, but the effects of this are insignificant, as the offset in the case of the Hudson is only  $\frac{3}{4}$  in.

Oakland, Oldsmobile and several other cars have brake controlled partly by a new tube-and-cable mechanism, that on the Oldsmobile being illustrated by one of the sketches. A bracket is riveted to the frame side member near the rear end of the front spring, in which is clamped a ferrule on the end of the flexible tube. There is a similar bracket on the brake backing plate of the front wheel brake, which is secured by means of two cap screws. The brake operating cable passes through the backing plate at an angle.

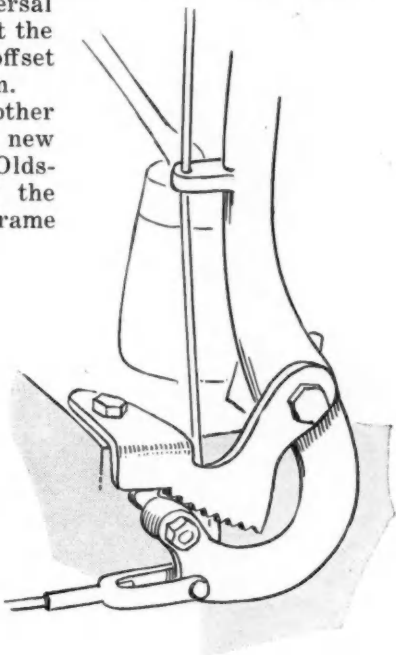
On the Nash Eight pressed steel brake arms are used. The braking system of this car comprises a single cross-shaft of large diameter (about 2 in.) which evidently consists of a thin-walled tube. The problem of securely fastening the brake arms to this tube is solved by using stamped steel levers and welding them to it. As shown by the sketch on page 42, a pair of slotted links connect from a rearwardly extending arm on the brake pedal to a forwardly extending arm on the cross-shaft. Near the ends of the cross-shaft there are double-armed

levers, also of the punched and welded type, which by means of additional punched parts bolted to their ends are formed into cable-sheaf sectors. Cables extending to the front and rear brakes are anchored at one end of these sectors.



Latest design of  
Midland Steeldraulic brake  
with T-section  
shoe

Lower end of  
emergency brake  
lever (below)  
on the Oakland



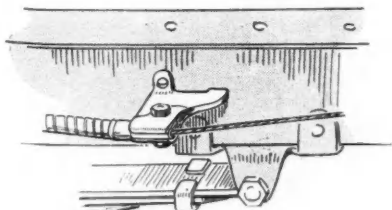
The emergency brake lever acts on the same cross-shaft through a cable which passes over one cable sheaf mounted on a bracket secured to the frame side rail and another on a bracket secured to the transmission housing, after which it drops down and extends through an eye at the end of a forwardly extending arm on the cross-shaft. Thus the connections from both the pedal and the emergency lever to the cross-shaft are of the over-running type. The cross-shaft is braced midway between the two horizontal arms to which the pedal and hand lever are connected by a stamping bolt to the bracket on the transmission housing.

On the Chevrolet a brake-adjusting device is used on the two cross-shafts directly in front of the rear axle, which is similar in principle to that employed on Cadillac and LaSalle cars. The arm on each shaft is loose thereon and carries a set screw (with locknut), the point of

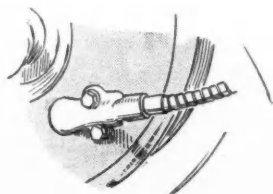
which presses against a nose or projection on a hub fixed on the shaft.

Oakland and several others now have a braking system in which the four-wheel brakes are applied by both the pedal and the hand lever. An advantage claimed for the Oakland system is that the lever has a greater range of motion than the pedal, so that should the pedal pad come down to the toeboard, the brake could still be fully applied by means of the emergency lever. This lever is of somewhat unusual form, as shown by the sketch. It is fulcrumed on a bolt supported on both sides—in a boss at the side of the shift-lever pedestal and in a bracket secured to the gear housing, which also has the teeth for the ratchet lock formed upon a down-turned portion. Below its fulcrum the lever describes almost a semi-circle, carrying the pawl for the ratchet lock at its end, and having the brake rod connected to it near the end. The emergency brake, moreover, pulls on the arm on the cross-shaft through the intermediary of a coiled spring, evidently to prevent too harsh application.

Heretofore the Midland Steeldraulic brake has had



Details of tube-and-cable mechanism for operating front wheel brakes on the Oldsmobile

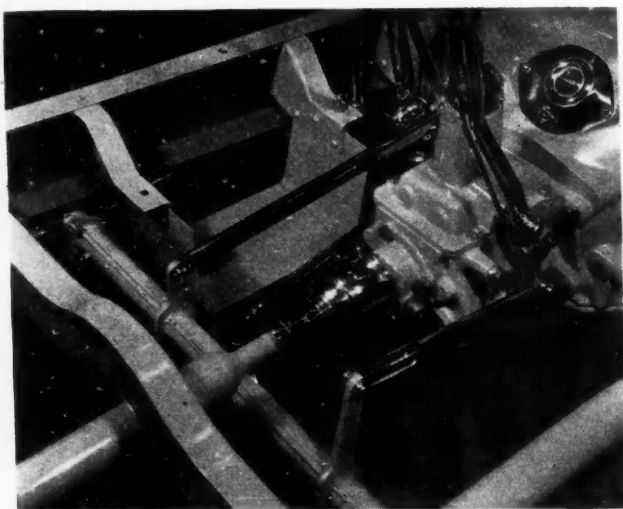




an expanding member consisting of a band portion and a shoe portion of channel form. In the latest design the channel-type shoe has been replaced by a T-section shoe. This latter evidently is more convenient for anchoring the retraction springs, and it also is simpler and lighter. The design is shown by a photograph reproduced herewith.

A feature of the braking system on the Durant 6-14 is the transmission of the braking effort from the brake pedal to the cross-shaft by means of two links, one in tension and one in compression. This obviates bending stresses on the tubular cross-shaft, subjecting it to torsion only. The construction is shown in the accompanying photograph.

Further developments in frame design have taken place, one of the most notable being the provision of a very deep cross-member at the rear of the engine in the Graham. This member is stamped with a large

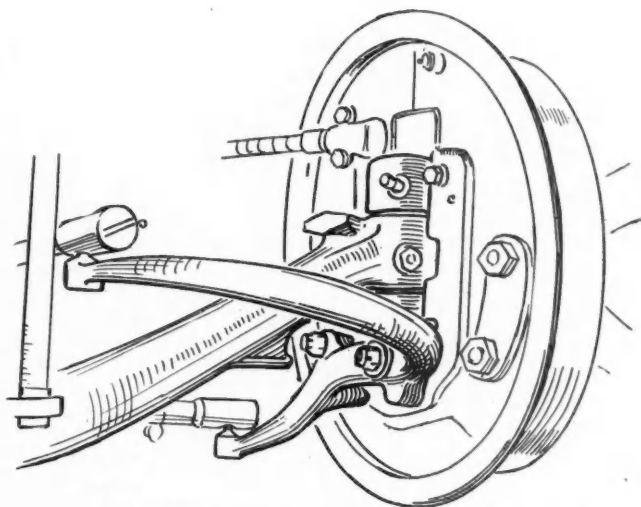


*The tubular brake cross-shaft on the Durant 6-14 is relieved from bending strain by a push-and-pull linkage which is actuated by the pedal pressure*

central opening through which the transmission is passed when it is being assembled on the engine while on the chassis. A photograph reproduced herewith shows the cross-member and the relation of the transmission to it. On the Nash Eight there is a large diameter tubular cross-member near the center of the frame which has conical end pieces with oval flanges welded to it. This distributes the strain on the side rails (to which the flanges are riveted) over a wide area.

Oldsmobile has the steering arm fastened to the knuckle by two studs and nuts as shown by one of the sketches. This feature has been used on heavier and more powerful cars in the past and seems to be gaining ground in vehicles of the lighter types. Up to recently the conventional method of securing steering arms to knuckles of the reversed Elliott type was by key and nut in a taper-bored boss on the inner side of one of the yoke hubs. Now a sort of flange is usually forged integral with the yoke of the knuckle to which the brake backing plate is secured, and it is a comparatively easy matter to fasten the knuckle arm to it by two studs or cap screws, which makes a more secure joint than a single fastening. The construction has the additional advantage that the two arms on the steering side may be made in one.

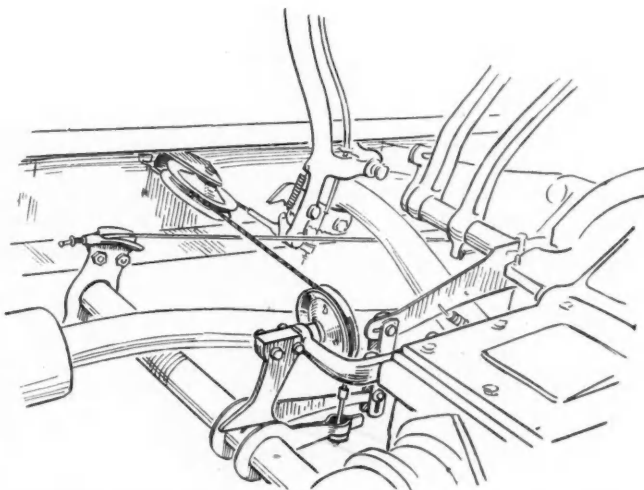
While on the subject of this sketch, attention may



*A double steering arm, fastened to the knuckle by two studs, is a feature of the front wheel assembly of the Oldsmobile for 1930*

be called to the adjustable steering stop, consisting of a set screw in the knuckle, secured by locknut, which abuts against a stop forged on the axle center. The outer end of the axle center is of full-round section and is forged with a pad for the application of the jack on the under side, as clearly shown in the sketch. A tube and cable mechanism for operating the front brakes, similar to that shown in the sketch, is provided also on Yellow cabs, and it was noted that in that case the flexible tube is provided with a lubricator fitting at about the middle of its length.

Arrangements of the control members are undergoing a gradual change. There has long been a tendency in low-priced cars to remove some of the controls, such as the spark lever, from the steering wheel, for reasons of economy. Now a similar movement with a somewhat different background seems to have set in. Since the time when spark and throttle were con-



*The new Nash Eight, introduced at the New York show, has an unusual arrangement of brake rigging, a detailed sketch of which is shown above*

trolled by long, substantial levers with knobs or buttons at the end, and moving over ratchet sectors, the

(Continued on page 50)

# American Austin Design Differs Radically From British

*Bodies are well streamlined, frame provides for front and rear  
bumpers and appearance conforms to conventions in the  
United States. Engine features changed but little.*

IF dealer interests, as judged by applications for franchises, can be taken as a criterion, the American Austin, given its first dealer showing at the Hotel Sheldon during New York show week appears to be headed for a favorable reception by the American dealer. According to a company official, the entire first year's production, previously set at 100,000 cars, could have been allotted during the first two days. So far, however, no actual dealer contracts have been signed, and none will probably be signed for several weeks to come.

The American Austin, intended to be sold at a list price of under \$450, while mechanically quite similar to the British chassis, is decidedly more along the lines of American passenger cars in its appearance. Bodies, which are to be built by Hayes, are well streamlined, and to the writer are the most attractive yet seen on a wheelbase as short as that of the Austin. Due to the short, 75-in. wheelbase, no attempt will be made to supply anything beyond two-passenger bodies. There is a two-passenger coupe, with a large package compartment back of the seats, a delivery unit with driver's seat only, and a two-passenger roadster.

Radiators, and frontal appearance generally, are radically different from that of the British Baby Austin. The radiator is of the modern deep type, with false bottom and top, gracefully rounded. Hoods are well streamlined into the body.

With the use of two-passenger bodies only, there is quite an astonishing amount of leg-room in the bodies. Head-room is also ample in spite of the low, 59-in. overall height. Seats are deeply cushioned and comfortable, steering wheels of the three spoke type.

While the cars are basically of the same design as their British prototypes, quite a number of changes have been made to adapt them to American requirements. Chief of these, of course, are the more attractive bodies. The drive has naturally been changed from right hand to left hand. One of the factors which is to some extent delaying production is that all thread sizes, etc., are being changed from the British to the S.A.E. standards to facilitate production and servicing.

Another change of considerable impor-

tance is the provision of bumpers front and rear. On the British cars, it will be remembered, the triangular frame does not extend to the rear axle, quarter-elliptic springs attached at their fixed ends inside the frame side channels forming the connection with the rear axle. In the American Austin the same type of construction is used, but from the point of attachment of the rear springs the frame side channel kicks up and continues to the rear of the body. Cross-bracing of this part of the frame is furnished by the one-piece, welded-in metal floor of the body. With this change, a further alteration was made in the frame, shock absorbers now attaching to the side rail extension instead of to the additional angle iron members of the cantilever type mounted at the inside and parallel to the frame sides.

Body floors, incidentally, should provide considerable additional bracing for the car as a whole. The channel over the propeller shaft, which in the British car is attached to the frame, in the American unit is part of the body floor in the front compartment, welded in. Body construction, aside from the floor, is of the composite type, with metal roof side panels. Radiators are of the cellular type.

Chassis "accessory units," such as electrical system, carburetor, etc., will all be of American manufacture, but mainly to British specifications. Electrical units will be produced by Autolite, the carburetor by Tillotson. Chassis lubrication fittings will probably be Alemite. Clutches and transmissions will also be produced by American unit manufacturers, but again basically to British design.

While some of the motor parts will undoubtedly be produced by equipment manufacturers, production of the unit as a whole will be centralized at the American Austin plant in Butler, Pa. Bore and stroke, as in the British car, is 2.2 by 3 in., giving a horsepower peak of around 12 at 2800 r.p.m. With this goes a rear axle reduction of approximately 4.9 to 1. Car weight is estimated at around 1100 lb., this low weight being largely responsible for the good performance claimed for the car. Open models are said to be capable of around 60 m.p.h., with around  
(Continued on page 54)

## Partial Specifications of Austin

Engine .....	L-head	Wheels .....	18 in.
Bore .....	2.2 in.	Type .....	disk
Stroke .....	3 in.	Tires .....	3.75 x 18
Carburetor .....	Tillotson	Total weight .....	1100 lb.
Ignition .....	Auto-Lite	Wheelbase .....	75 in.
Clutch .....	Single plate	Dia. turn. circle .....	32 ft.
Cooling .....	Thermo-siphon	Overall length .....	115 in.
Rear axle .....	¾ floating	Height .....	59 in.
Ratio .....	4.9 to 1	Tread .....	40 in.
Brakes .....	4 wheel	Road clearance .....	8¾ in.
Type .....	2 shoe	Speed (est.) .....	50-60 m.p.h.

# Jordan and Elcar Announce While Six Other Makers

By ATHEL F. DENHAM

**I**N addition to the numerous 1930 chassis and body models which have been described in recent issues of *Automotive Industries* and which were exhibited at the New York Automobile Show, two manufacturers displayed new chassis models and several exhibited new bodies. Jordan and Elcar had the chassis, while additional bodies, not previously announced, was shown by



*View of the Elcar 140 chassis, showing some of the five tubular cross-members. Note the underslung front springs and deep frame section*

Nash, Packard, Stutz, Lincoln, Studebaker and du Pont.

Jordan Motor Car Co. came to the show with two lines of cars, the Series 70, shown in a "Sunshine" sedan, listing at \$1,495, and the Speedway series listing at \$5,550, shown in two body models, a four-passenger speedster called the Ace, and a five-passenger close-coupled sedan called the Sportsman. Both models are eight-cylinder cars, giving Jordan four lines of eights, with the Models T and G continued, but now called the Series 80 and Series 90. The six-cylinder Model E has been dropped. Lower prices are effective on both the 80 and 90.

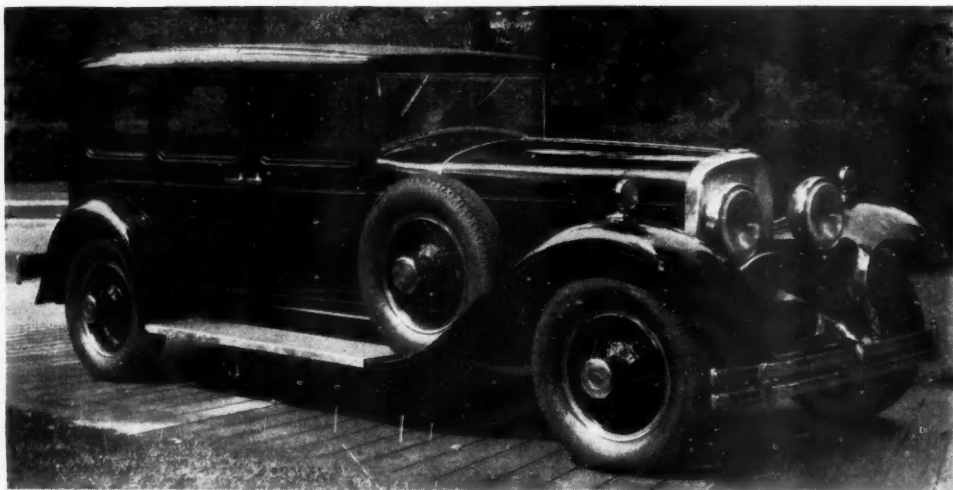
The Speedway series, on a 145-in. wheelbase, is characterized by extremely unusual body lines. The cars are low and racy, with their deep double-drop frames. Running boards are of airfoil section and do not extend completely to front and rear fenders. Front fenders curved down in front almost to the bumpers, effectively concealing the chassis. There are two chrome-plated horns mounted below the Woodlite headlamps. Radiator shells and shutters are

also chrome-plated, while the radiator filler cap has been removed from the top of the shell and is now located under the hood.

Bodies are of all aluminum construction, giving the car an exceptionally low weight for its wheelbase and power. As a result, a top speed of 100 m.p.h. is claimed for the Speedway models, with their four-speed overdrive transmissions. Interior finish is also quite unusual. The instrument board, and entire front compartment, for that matter, is of the airplane cockpit type. Choke, throttle and lever controls are of the lever type, located at the lower center of the instrument board. The latter in addition to the usual instruments also mounts a compass, an altimeter and a tachometer.

In the Ace, entrance to the rumble seat is through the front compartment. The right seat is slid forward, the center arm rest pulled down, giving access to the rear deck control handle, and the left rear deck section between rumble seat and front compartment is lifted (being hinged). Both sedan and speedster models have rear luggage compartments. Rear sedan doors are D-shaped, with the curve at the rear, giving an unusual and attractive effect. Side arm rests for the rear compartment are mounted on the doors since they extend back a great deal further than usually. Radio equipment is provided in both models of this series, and seat cushions are of double-deck type. Colors and upholstery are optional to the purchaser, since the series is strictly custom built.

Mechanically, the main feature of the Speedway



*View of the standard four-door five-passenger sedan on the new Elcar 140 chassis. It has an underslung worm drive rear axle*



# 1930 Series *At New York* *Add to Body Models*

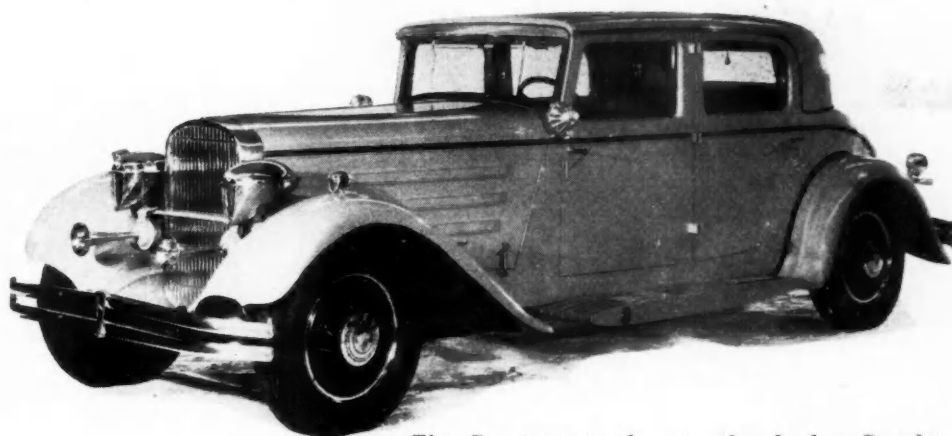
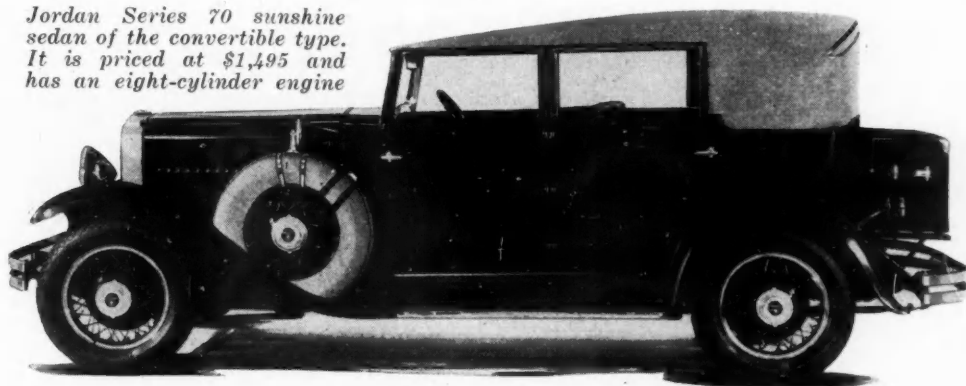
and W. K. TOBOLDT

series is, of course, the four-speed transmission, of Warner gear manufacture, which has direct drive in third and an overgear for fourth. Fourth speed is in these cars therefore designed mainly for occasional high-speed driving. The engine is a 3% by 4½-in. Continental straight-eight, claimed to develop 114 hp. at 3200 r.p.m., with its piston displacement of 322.45 cu. in. Pistons are Bohnalite. The carburetor is of the dual type, with dual manifold. Distributors are also of the dual breaker type.

Engine accessories include a Lanchester damper on the counterweighted 2⅝-in. crankshaft, air cleaner, oil filter and fuel pump. Clutches are of the single-plate type with 11-in. driven disk and cushion-drive hub. Axles are of semi-floating type with 3.92 to 1 reduction. Spring lengths are 37 in. for the front and 57¾ in. for the rear, both being 2 in. wide, and mounted in the rubber shackles adopted by Jordan on other models last year. In these shackles there are tapered rubbered bushings at either side of the shackle pin, bond being mechanical by side pressure, put on by tightening shackle bolts.

Steering gear is of the Marles type with roller-bearing sector tooth and a ratio of 18 to 1. Wire wheels are standard equipment, with 7.00 by 18-in. tires. Tread is standard at the front and 59 in. at the rear. The final drive is of the Hotchkiss type. Road clearance is 8 in. Shatter-proof glass is used throughout. Brakes are of the four-wheel hydraulic type with 16-in. drums, supplemented by an 8-in. drum for the emergency brake on the propeller shaft.

*Jordan Series 70 sunshine sedan of the convertible type. It is priced at \$1,495 and has an eight-cylinder engine*



*The Sportsman sedan on the Jordan Speedway chassis. Note the hood louvers, headlights, fenders, running boards, sloping windshields and D-shaped rear doors; also the absence of a radiator filler cap*

## *Jordan*

The Series 70 is also characterized by unusual body lines. It is a convertible sport sedan. Mechanically it is derived mainly from the former Model T, the major change being found in the brakes which are of the cable-operated two-shoe Bendix type. Wheelbase of this model is 120 in. The engine is a 2⅞ by 4¾ in. Continental eight, clutches are single-plate with 9¾-in. disks, transmissions are conventional three-speed units. Two rear axles ratios are available, 4.45 and 4.9 to 1. Hand brakes operate the rear wheel shoes. Steering gears are of the cam-and-lever type, tires are 5.50 by 18 in.

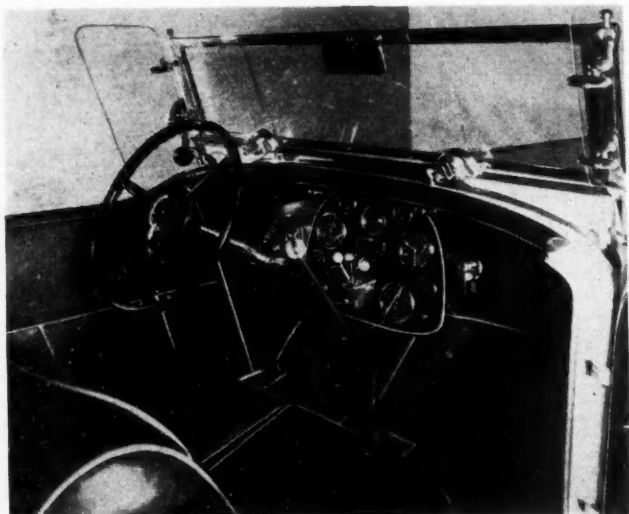
The photograph of the Sunshine sedan shown elsewhere on this page does not do full justice to the production model. In the latter, the rear pillar of the rear door slants slightly forward, to balance the sloping windshield pillar, and the rear corner of the roof is not quite so sharp, and slightly lower, giving a more flowing body line. The high waist line of the model, together with the cowl saddle continuing down across the front door in a sweeping curve, gives the car quite an air of distinctiveness.

## *Elcar*

One more line of Elcar eights, the Series 140, made its appearance at the New York show. Mounted on a 135-in. wheelbase the car is considerably lower than former Elcar models, due largely to the underslung front springs and underslung Timken worm drive rear axle. Body lines are distinctive due to the use of a

V-shaped radiator and unusually low belt molding. Prices are \$2,645 for the five-passenger four-door sedan, and \$2,750 for the convertible sedan offered in the line. Both prices include six wire wheels with the spares mounted in fender wells, trunk rack and either mohair or broadcloth upholstery as standard equipment.

Mechanically the car is composed of a Continental



*Interior of front compartment of the Jordan Speedway showing the airplane type instrument board and controls. Included in the instruments are a compass, altimeter and tachometer*

12K engine, with Stromberg dual carburetor and manifold, dual breaker distributors with two coils, Long clutch incorporating the coil spring cushion drive and torsional damper, Warner gear four-speed transmission, worm drive Timken axle, Lockheed hydraulic brakes, Ross steering gear, Spicer propeller shaft and Belflex shackles.

The engine, which develops, according to factory claims, around 140 hp., has Bohnalite pistons, chain front end drive, pressure lubrication to all bearings except piston pins, rubber mounting at four points, the mountings being of the Firestone vulcanized type, and Lanchester torsional damper. In addition to the chrome-plated radiator shutters a thermostat is provided to control water circulation. Electrical units are of Delco-Remy manufacture.

Frames are of the double-drop type, with five tubular and two channel cross-members. One of the tubular members passes under the powerplant between the engine pan and the bell housing, to stiffen the frame and reduce body weave at this point. Fuel is supplied to the engine from a 22-gal. tank by an AC pump.

Standard equipment includes Ryan headlights, fender parking lights, combination tail and stop light, backing-up light, cigar lighter, ash tray, clock, heat indicator, dual windshield wiper, double rear vision mirror, four Gabriel hydraulic shock absorbers, and the items already mentioned.

A preliminary showing of an Elcar six equipped with a Powell lever motor was at the New York show. Briefly the connecting rod is attached to the free end of a horizontal lever, which at the opposite end is pivoted to the sides of the case, power being transmitted from this horizontal lever to the crankshaft by means of a second connecting rod, attached to the above mentioned lever about midway between its pivot and the piston connection.

In this manner the piston stroke is considerably

longer than the crankshaft throw would permit if a normal connecting rod design. Other claims for the engine are that they reduce piston side pressure because of reduced connecting rod angularity, and the possibility of building a more rigid crankshaft due to the shorter throws.

Externally the engine as used in the Elcar is higher than the conventional type, coming to within a few inches of the top of the hood. Detachable plates are provided on the sides of the engine crankcase to facilitate the removal and replacement of pistons, connecting rods and levers.

### *Du Pont*

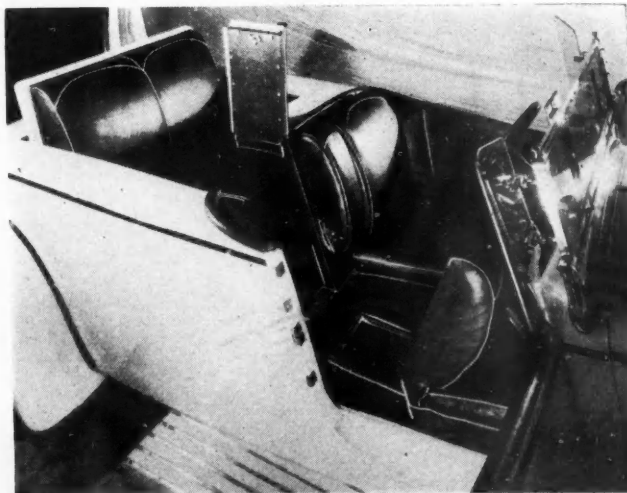
With the showing of its cars at New York, du Pont announced that it had standardized on four-speed transmissions for all its models. No new chassis models were announced, according to the du Pont policy, but several modifications and new body models were apparent. One of the items noted on several body types was the use of a deeper radiator than formerly.

Of the body models added, or shown for the first time, there was a four-passenger speedster model of the same general type as the two-passenger speedster exhibited at last year's New York show, with rounded racing car type radiator front, and narrow mudguards instead of fenders over the wheels for reduction in frontal area. In this model rear axle ratios of 3.5, 3.7, or 4.0 to 1 are offered.

Added to the regular chassis are also a transformable town car, with air cushions and French rayon upholstery, and a victoria cabriolet, a four-passenger two-door model with leather side-lining and Bedford cord upholstery. This model also has a collapsible top.

### *Nash*

The new models in the Nash line include roadsters with rumble seats on the two six-cylinder chassis, a five-passenger phaeton with tonneau cowl and windshield on the twin-ignition six and a five-passenger landaulet on the single six. These models are priced at \$1,365, \$975, \$1,595 and \$1,155 respectively. The new open cars are fitted with forward folding windshields and the top in the folded position is flat and inconspicuous. The folding landaulet has the characteristic Castagna belt line and paneling on the side splash shields.



*Detail of the new Jordan Speedway Ace, showing how access from the front seat to the rumble seat compartment is facilitated*

## Packard

Additions to the Packard line are featured by a speedster model on a 134-in. wheelbase chassis and priced at \$5,200. This model is completely streamlined with the fish-tail type rear and sweeping fenders. To reduce the width of the body front seats are staggered. While all units are of standard construction on this model, power has been increased to 140 hp. by raising the compression ratio, altered camshaft and improved carburetion. Other new body models include a seven-passenger sedan and a seven-passenger sedan limousine on the 745 chassis, and a victoria and a sedan.

## Stutz

A convertible coupe body by Hubbard & Darrin on a Stutz chassis and finished in light tan presented a striking appearance. Instead of the conventional fenders, the wheels were inclosed in an air-foil section, improving the streamlining. The low chassis height permitted the elimination of the running boards. Each side of the top of the hood was covered with a sheet of metal, which extended back to the windshield and finished to match the body. A trunk at the rear blended into the streamlining of the body. The interior was upholstered in leather and front seats were adjustable.

## Lincoln

Metal rear quarters replace the fabric on the Lincoln five-passenger sedan priced at \$4,500. By removing the package compartment behind the driver's seat on the victoria model of the 125-in. Studebaker President, room has been provided for an additional passenger. This five-passenger model is now priced at \$2,245.

## Kissel

Several body changes and two mechanical refinements are introduced in the 1930 series of cars presented by Kissel Motor Car Co. of Hartford, Wis., at the New York show.

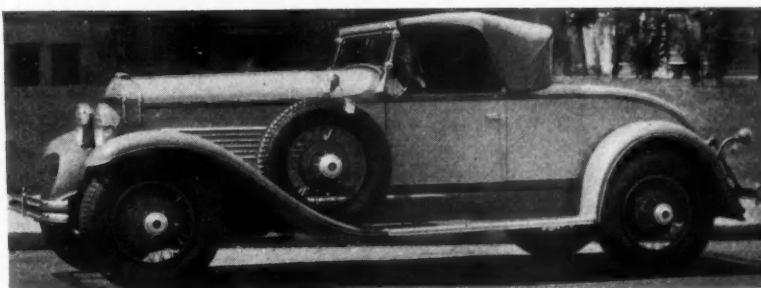
Adoption of the Warner Hi-Flex 4-speed transmission in all models is the most outstanding of the mechanical changes. Double acting Lovejoy shock absorbers also are presented as standard equipment in the 1930 line.

Bodies in the brougham sedan models of the 8-73 and 8-95 series as well as the de luxe brougham sedans have been considerably enlarged. The de luxe body is higher, longer and four inches wider. The slope of the top is more rounded at the rear, adding considerably to the general exterior appearance. Rear windows are long, oval shaped and can be lowered in the same manner as the door windows.

## USL Battery at Show

SPECIAL exhibits of USL Battery Corp. products in New York and Chicago during the time of the National Automobile shows have been completed by officials of the company. The exhibit will be in the Commodore Hotel, New York.

C. O. Miniger, chairman of the board; D. H. Kelly, president; A. A. MacLean, first vice-president; J. A. White, vice-president; W. W. Pennington, sales man-



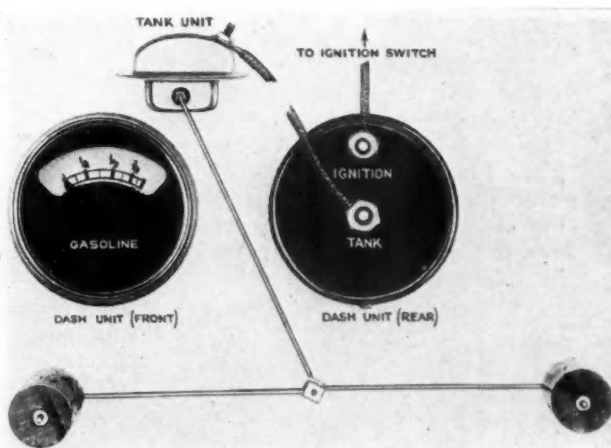
The Windsor White Prince Roadster

ager, manufacturers division; H. A. Harvey, sales manager for replacement sales; I. S. Johnson, assistant sales manager, replacement sales; E. D. Giauque, advertising manager; C. H. Munson, service manager; A. R. Reid, chief chemist; George L. Kyle, battery engineer, and George Mueller, New York district manager, will represent the corporation at the show.

## Electric Tank Gage

THREE car manufacturers so far have adopted a new "electric" tank gage for the fuel tank which has been brought out by the AC Spark Plug Company. There are two cork floats, at the ends of a metal rod of considerable length, whereby the effects of surging in the tank or of an inclination of the car are neutralized. From the center of the rod connecting the floats mechanical connection is made to a "tank unit," evidently in the form of an electrical resistance which is varied by changes in the position of the floats. From the tank unit an electric cable leads to the dash unit, which latter is also connected electrically with the ignition switch. Thus the device is incorporated in the electrical system of the car.

It is claimed for the instrument that it is corrosion-



AC Spark Plug Co.'s electric gasoline tank gage

proof, that the current consumption is very small and that changes in battery voltage do not affect the indications.

A PAMPHLET entitled American National Screw Thread Tables for Shop Use—I, Standard Threads, Coarse and Fine Pitch Series, has been issued by the Bureau of Standards, Washington, D. C. It makes available for convenient use six of the most essential tables of dimensions of fastening screws as published in the 1928 report of the National Screw Thread Commission.



# Just Among Ourselves

## Large Public Attendance Proves Success of Show

THE 1930 New York Show went off with a bang! There isn't any doubt about that.

For the first half hour after the doors were opened on Saturday, Sam Miles stood beside one of the big crimson-colored pillars near the entrance, his countenance making no attempt to conceal the satisfaction which he felt as one of the largest crowds of recent years began pouring through the portals.

"Guess this old industry isn't going to the dogs yet," he remarked with a wave of his hand toward the surging crowds which were clamoring for admittance and the hundreds of people who already dotted the aisles of the Palace even inside of five minutes after the gates had been unlatched.

This comment of the veteran show manager expressed succinctly the feelings brought to almost every executive we talked to Saturday about the significance of the public interest shown on the opening day. As this is written the 1930 New York Show bids fair to inspire confidence and fighting spirit in the entire industry to a greater extent than in any previous year for a long while back.

\* \* \*

## Anxiety Disappears As Palace Doors Open

ONE couldn't help get a thrill out of that big opening day crowd. More chief executives of passenger car companies than usual were prowling about the Palace early in the day. An eagerness, tinged with anxiety, about the public's immediate interest in automobiles rode from the West in the hearts of many

executives this year. And when that big crowd began to storm the doors of the Palace on Saturday afternoon, the smiles that came to the faces of many executives were as big as the jobs those men occupy and as broad as the policies on which they have built the automobile business to industrial premiership in the United States.

\* \* \*

## Executives Visit Exhibits Early

EARLY executive visitors to the Show this year included such important personages as W. S. Knudsen, Chevrolet president, and his chief engineer, J. M. Crawford; A. R. Glancy and W. R. Tracy, of Oakland; Roy Faulkner and N. E. McDarby, of Auburn; LeRoy Peed of De Soto; A. R. Erskine, Studebaker's chief, and his sales and engineering right bowers, Paul G. Hoffman and H. S. Vance; W. J. McAneeny, Hudson president; Rufus Cole of Hupp; A. J. Chanter, Pierce-Arrow, and many others.

\* \* \*

## Cash Customers' Interest Equal to the Industry's

THEN too there seemed to us to be more factory engineers at the exhibit this year than has been common for some time. The chief engineers of several manufacturing companies headed delegations of technicians to the show this year. Foreign visitors, both manufacturers and dealers, were present in large numbers as the exhibit opened.

From the standpoint of the industry itself we sensed a more intense interest in what this show would bring forth than has been evident for some time past.

And that is why it was so good to see an equal interest on the part of the cash customers who comprise that oft misquoted, and just as frequently misunderstood, entity known as The Public.

\* \* \*

## Price Readjustments Are Numerous

PRICE adjustments were numerous as the show opened and further changes and modifications were forecast for later days of Show Week. Contrary to general expectations, price reductions played just as strong a part in the readjustments as did increases.

It will be another week before all the returns are in and detailed analysis can be made of just what has happened. As this is written, too, it is too early to guess exactly what effect on sales the price changes will have had by the close of the exhibit.

\* \* \*

## Competitive Policy As Yet Undecided

IT is clear that the industry is divided in thought as to the best way to meet 1930 competitive conditions. Price revisions are being made both upward and downward. Some companies which have been operating on a direct dealer basis are returning to distributors; some which have been using distributors are working toward a direct-dealer set up. Dealer discounts were cut by Ford and more have been modified in a few instances. In a vast majority of cases, however, including Chevrolet, no change has been made in dealer discounts. It is interesting to note that the Chevrolet price did not bring with it a cut in dealer discount.—N.G.S.

# Cadillac V-16 Vacuum Brake Assister Is of Original Design

*Sleeve and rod mechanism, actuated by pressure on the brake pedal, transmits booster action to brake linkage.*

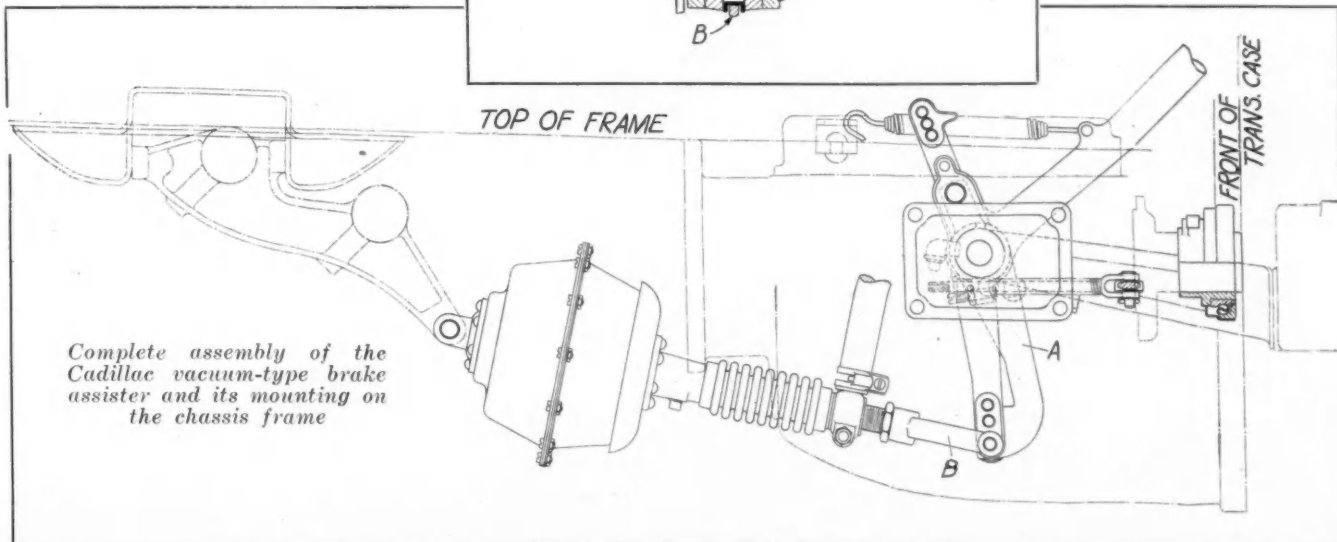
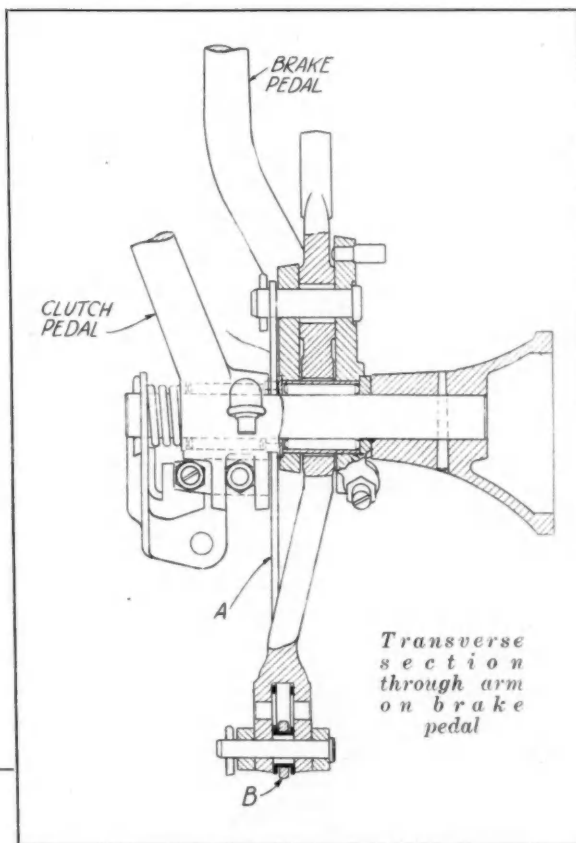
IN the article on the new Cadillac V-16 in our issue of last week a brief description was given of the vacuum brake assister. This device is of an entirely new design and its action cannot well be understood without a number of illustrations, hence three drawings of details and the complete assembly are reproduced herewith and the "assister" will be described by reference to these drawings.

The actuating mechanism comprises a sleeve with a yoke, at its forward end, which is pinned to an arm extending down from the hub of the brake pedal; and a rod with-in this sleeve, which is actuated by a separate lever attached to the arm on the brake pedal. The sleeve transmits the booster action to the brake linkage, while the rod operates the valve mechanism.

It will be noted that there is about 1/16 in. clearance between the bore of the brake pedal hub and the pin on which it turns, and there is also considerable clearance between the bushing in the forked end of the valve-actuating rod and the pin through it, which is mounted in the arm depending from the hub of the brake pedal. As the pedal is depressed, lever A pushes rod B back (to the left in the sectional view). The effect of this is

to push the pressed steel cup C back or to the left, thereby closing the "atmospheric" valve D. As rod B continues to move back, cup C ends up against the under side of the head of stop-screw E, and any farther motion of the rod and the cup opens the "vacuum" valve F.

By the time the vacuum valve has been opened sufficiently to allow free passage of air from the booster chamber into the manifold, the clearance in the pedal mounting bushing has been taken up and the sleeve surrounding rod B begins to move. Further depression of the pedal moves both the rod and the sleeve simultaneously, the vacuum valves remaining open, with the cup C slightly depressed and the atmospheric valve therefore closed. If the pedal is now stopped, suction continues to move the diaphragm backward a slight amount, closing the vacuum valve, the

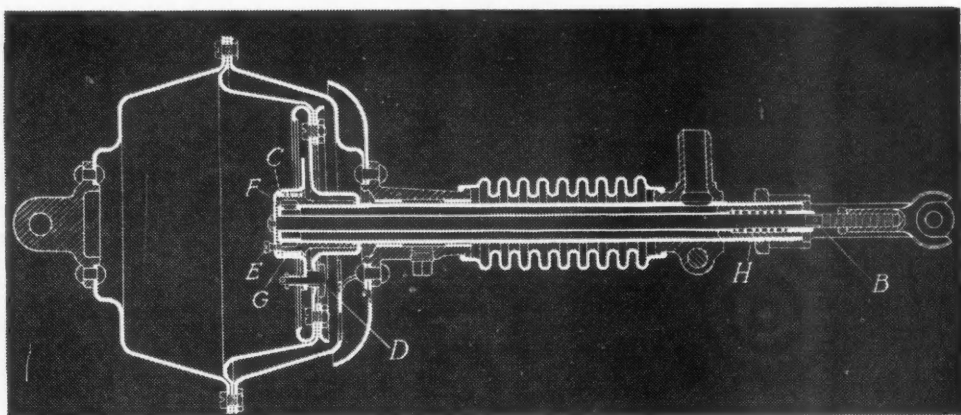


atmospheric valve also remaining closed under the pressure of coil springs *G* and holding the brake in that position.

If the pedal is now released, rod *A* will first move back under the pressure of spring *H*, taking up the clearance under the cup and allowing the atmospheric valve to open. Further backward motion takes up the clearance in the pedal arm boss so that the sleeve will move backward, retracting the diaphragm.

In operation, while holding the brake, a slight depression merely opens the vacuum valve, which closes again at the end of the depression stroke, while a slight relieving of pressure opens the atmospheric valve which closes again at the end of the backward motion. The clearance between the bushing at the forward end of the rod and the pin passing through it, of course, is to permit motion of the valve-actuating rod without affecting the sleeve. The sleeve, it will be noted, is welded to the diaphragm.

The sleeve referred to in the foregoing is surrounded by another sleeve or tube and the brake cylinder or



Section through brake cylinder and its control mechanism on the Cadillac V-16

vacuum cylinder communicates with the inlet manifold through the space between these two concentric tubes.

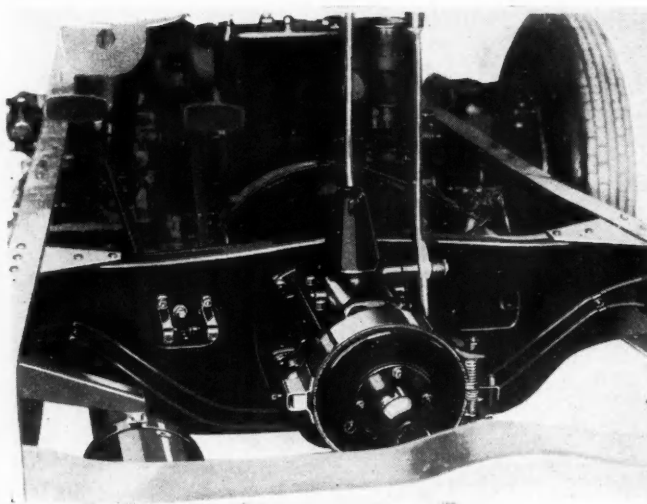
As stated in the description of the Cadillac V-16 in *Automotive Industries* of Jan. 4, the assister mechanism is hooked up to the brake linkage in such a manner that its action is entirely independent of the mechanical operation of the brake. If the assister should be removed, the brake would still function. The unit is of the diaphragm type, and is operated from the inlet manifold. The brakes on the Cadillac V-16 are of the Huck type, of Cadillac design.

## Numerous Chassis Changes in 1930 Models

(Continued from page 42)

control levers have become constantly daintier and less conspicuous, and now a number of designers have gone so far as to eliminate them entirely. In several cars there is now only a button at the center of the steering wheel, for the horn and for the lights. On the big Marmon, wire controls are used to an unprecedented extent—for the choke, the timer, the throttle and the heat control valve—four control buttons being arranged symmetrically at the center of the instrument panel. On the new Dynamic Erskine the choke and the starter gear are controlled by wire mechanisms, controlled from the instrument panel.

Radiator fillers seem to have passed through a similar metamorphosis as steering wheel controls. For a number of years they have become constantly shorter and larger in diameter, and now Hudson and Essex have entirely eliminated them from the outside



The Graham has a deep cross-member at the rear of the engine, stamped with a large central opening through which the transmission passes

and concealed them under the hood, while the radiator has a dummy cap.

On the Pontiac the accelerator linkage has been redesigned so that the accelerator pedal has a greater travel for the speed range 25-30 miles per hour than was the case formerly. This assures greater sensitiveness within this speed range, which is much employed in normal driving.

Stop lights are now a general feature of cars, and require a switch which is operated from some part of the braking linkage. Where a single cross-shaft is used it is automatically operated from the latter, but the

location of the switch varies. The Chevrolet has it on the inside of the left side rail channel, while the Buick has it secured to the rear of the transmission housing and operated from the cross-shaft through a link, and a third maker places it on a frame cross member back of the brake cross-shaft.



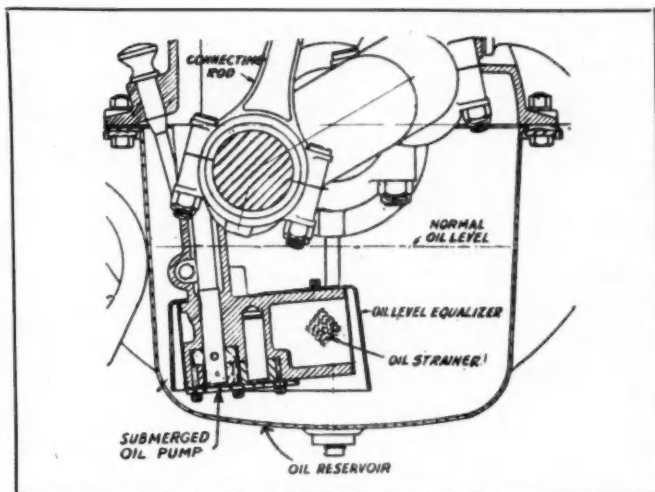
# Waukesha Adds Two More Engines to Six-Cylinder Line

*Company now has sixes ranging from 25 hp. to 300 hp. Models exhibited at the New York Show are of 219 and 255 cu. in. displacement, designed for 1½-ton trucks.*

AT the New York show the Waukesha Motor Co. exhibited the latest addition to its line of engines, the Waukesha Dispatch Six. Since the company brought out its first six-cylinder model (for coach and truck service) in 1924, fourteen additional sixes have been developed and there are now available Waukesha engines in six-cylinder form covering the range of from 25 to 300 hp.

The new Dispatch models, of 219 and 255 cu. in. displacement respectively, are designed for use on 1½-ton trucks, as well as for industrial uses in hoists, pumping units, generating sets, etc. Special claims are made for the manifolding, a new design known as the Blue Flame manifold being used. With it the engine is said to be capable of idling for an hour or more and at the end of that time to respond to the throttle without sputter. Other features of these engines are a Ricardo head and a large, rigid crankshaft. The chief specifications of the two engines are given in tabular form herewith.

Full pressure lubrication is provided by a submerged pump of large capacity. This pump delivers oil directly to a rifle-drilled header, through drilled leads to each



*Oil-level equalizer, in section, of Waukesha engine*

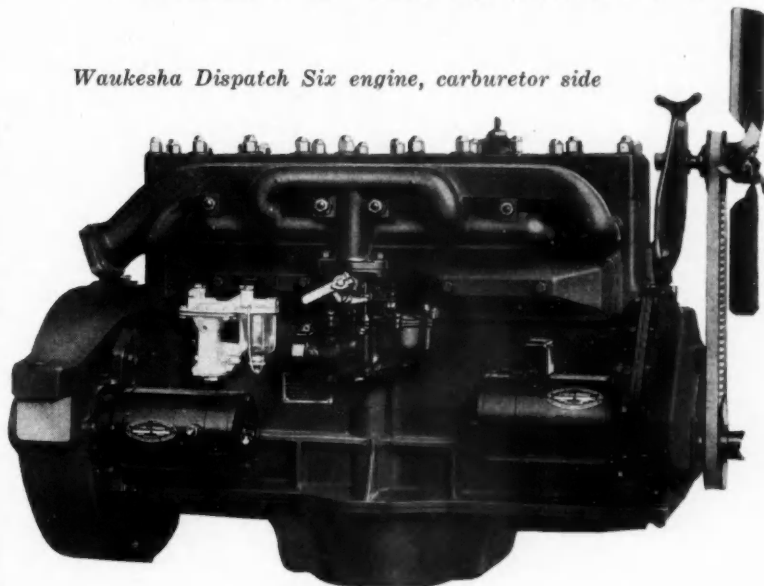
crankshaft, camshaft and idler-gear bearing, and through drilled ducts in the crankshaft and connecting rods to the connecting rod and piston pin bearings. A special lead fills the valve tappet chambers with oil, so that the tappets and valve stems are always submerged. There are no tubes and tube joints in the oiling system, hence possibility of trouble from them is eliminated. A series type of filter is bolted directly to the side of the engine, also without piping and joints.

A feature of the lubricating system is the oil-level

## Waukesha Six Specifications

	6TS	6TL
Bore and Stroke	3 1/8 x 4 3/4	3 3/8 x 4 3/4
Displacement, cu. in.	219	255
Intake valve dia., clear	1 3/8	1 3/8
Exhaust valve dia., clear	1 3/8	1 3/8
Connecting rod bearing, dia. x lgth.	2 x 1 1/2	2 x 1 1/2
Front main bearing, dia. x lgth.	2 3/8 x 1 1/4	2 3/8 x 1 1/4
Intermediate main bearings (2), dia. x lgth.	2 3/8 x 1 1/4	2 3/8 x 1 1/4
Rear main bearing, dia. x lgth.	2 3/8 x 2 3/8	2 3/8 x 2 3/8
Piston pin bearing, dia. x lgth.	1 x 2 5/8	1 x 2 5/8
Connecting rod length	8 3/4	8 3/4
Number piston rings	4	4
Camshaft dia.	1 1/8	1 1/8
Timing gears, face	1 1/4	1 1/4
Carburetor flange, S.A.E., size	1 1/4	1 1/4
Exhaust manifold—bore	2 1/4	2 1/4
Fan diameter (extra equipment)	17	17
Spark plugs, Metric standard	18 mm.	18 mm.
Flywheel housing, S.A.E., No.	4	4
Approximate weight, lb.	625	640

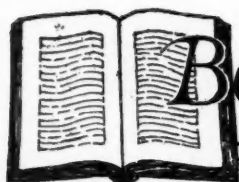
*Waukesha Dispatch Six engine, carburetor side*



equalizer, for which it is claimed that it maintains a positive supply of oil at the pump inlet under all operating conditions. It eliminates the possibility of air-bound oil lines. As shown in the diagram, it consists of an inverted steel cup placed over the oil-pump screen, which fills with oil by vacuum action as soon as the

engine is started. This arrangement permits the use of a vertical, self-cleaning screen of large area and avoids placing the screen in the sludge at the bottom of the oil reservoir.

Attention is also called to the large water pump, mounted at the side of the engine.



## Books for the Business Bookshelf

### *Wage Incentive Methods*

By Chas. Walter Lytle, M. E. The Ronald Press Co., New York. 457 pp.

A STUDY of wage payment methods in industry just completed by the Sherman Corporation, Boston, Mass., reveals the fact that in the case of manufacturers who have adopted wage incentive plans, 99.1 per cent have decreased manufacturing costs and 99.7 have increased employee earnings, thus throwing an interesting light on this book dealing as it does with the selection, installation and operation of wage incentive methods.

Apparently there is a large variety of wage payment plans and variations of them. The author takes 25 of the better known and more distinct of these plans and by comparing them on the same basis shows the surprising similarity of them all when they are plotted on the same chart. He then selects 10 of these plans which to his mind are the best, covering the gamut of requirements and shows when, why and how to use them. A valuable feature of the book is the logical sequence in which the subject is developed. The author makes clear that the first step in the installation of a wage incentive system is to set rates on all operations and equalize them throughout the plant. This leads to a discussion of procedure and detailed studies of the various wage plans, such as time rate, single piece rate, multiple rate, constant sharing, et cetera. The book concludes with an appendix which shows clearly how to study and analyze the ten plans that are recommended.

What marks this book as really usable and practical is the wealth of graphs, tables, examples and other essential material with which it is illustrated.

### *Aviation—Its Commercial and Financial Aspect*

By Richard Rea Bennett. The Ronald Press Co., New York.

THE present status of aviation as a commercial, financial and sporting venture is outlined in general terms in this book which was written by the assistant Sunday editor of the *Baltimore Sun*. It is the author's belief "that safety is a factor which will govern the acceptance of the commercial airplane." And he proceeds to show how increasing the safety factors of airplanes in commercial use will result in increased public confidence in airplane manufacturing companies as a subject for investment.

The progress of aviation as a business venture is dramatized throughout the book, but there is apparently no sacrifice of accuracy insofar as the figures used are quoted from reliable sources. Names of individuals and companies responsible for particular developments are carefully pruned from the text, which rather detracts

from the interest of the book. The illustrations are designed to show how far the airplane has progressed as a medium of safe and comfortable transportation. Purely descriptive and non-technical the book would be of most value to the man in the street who is interested in knowing something about why aviation securities have aroused so much interest on the stock market.

### *Yearbook of the German Automobile Manufacturers Association*

(Jahrbuch des Reichsverbandes der Automobil-Industrie), fifth year. Published by Dr. Ernst Valentin Verlag, Berlin.

AS in former years, the German Automobile Manufacturers Association has published a yearbook for the year 1929, this year's edition being issued under the editorship of Dr. Ing. Wilhelm Scholz, general manager of the Association, and Dr. Ernst Valentin. The volume contains an extensive business report of the Association by Dr. Scholz, a tabulation of foreign tariff duties on automotive products, an article on the headquarters of the Association, an article on the effects of simplification and standardization in the German automobile industry, and considerable statistical material. The business report of the Manufacturers Association is divided into a considerable number of sections covering practically all of the topics that interest the automobile manufacturer.

### *Vielschnittbanke, Ihre Konstruktion und Arbeit*

By Prof. Dr. tech. Max Kurrein, published by Verlag der Werkzeugmaschine, Berlin, Germany.

THIS is a treatise on multiple-tool lathes, the author being chief engineer of research on machine tools at the Berlin-Charlottenburg technical college. The basic principle underlying the design of these lathes, the author says, was first applied by Flanders in the Fay automatic lathe of 1909 and the idea was developed by him until the full automatic was reached in 1913.

The book discusses the development of the type, showing that the early types resembled the ordinary lathe in their general form and that the design has been greatly improved in recent years in respect to appearance, rigidity, convenient location of operating members, and compactness. The text is divided into two sections, dealing respectively with the machine and its tooling. In the first section the elements of the machine, viz., drive, bed, tool carriage, carriage feed and control, hydraulic feed and spindle drive, are discussed in succession, with the aid of numerous illustrations, while in the second section the tooling for various common parts, such as a camshaft, a bevel pinion, etc., is described and illustrated.

# Paige Commercial Cars Announced With Price at \$1,095

*Two delivery units are offered by the Graham-Paige Motors Corp.  
Screen and panel bodies are mounted on special six chassis  
and follow modified passenger car design.*

**G**RAHAM-PAIGE Motors Corporation, which heretofore has produced passenger cars only, has added two commercial cars to its line of products, a panel delivery and a screen delivery, both priced at \$1,095. These delivery units, called "Paige" commercial cars, are mounted on the Graham special six chassis, with minor modifications to adapt it to the mounting of commercial bodies, and slight deviations occasioned by the differences in passenger car and commercial car requirements. Their load capacity is 1500 lb.

Outstanding in the new vehicles are the attractive appearance and attention to detail in body design. Hoods, radiators and cowls are distinctly of the passenger car type, with the characteristic Vee shaped radiator front, chrome-plated cowl bands, etc.

Taking the body from the front, there will be noted a passenger car type metallic sun visor, just below which is mounted a visor sign with glass front, for the lettering of advertising. Inside the sign are four 6 cp. bulbs, the switch to operate them being located in the left door header. Windshields are of the two-piece type. Spare tires are carried in a well in the right front fender, the carrier being mounted on the chassis frame.

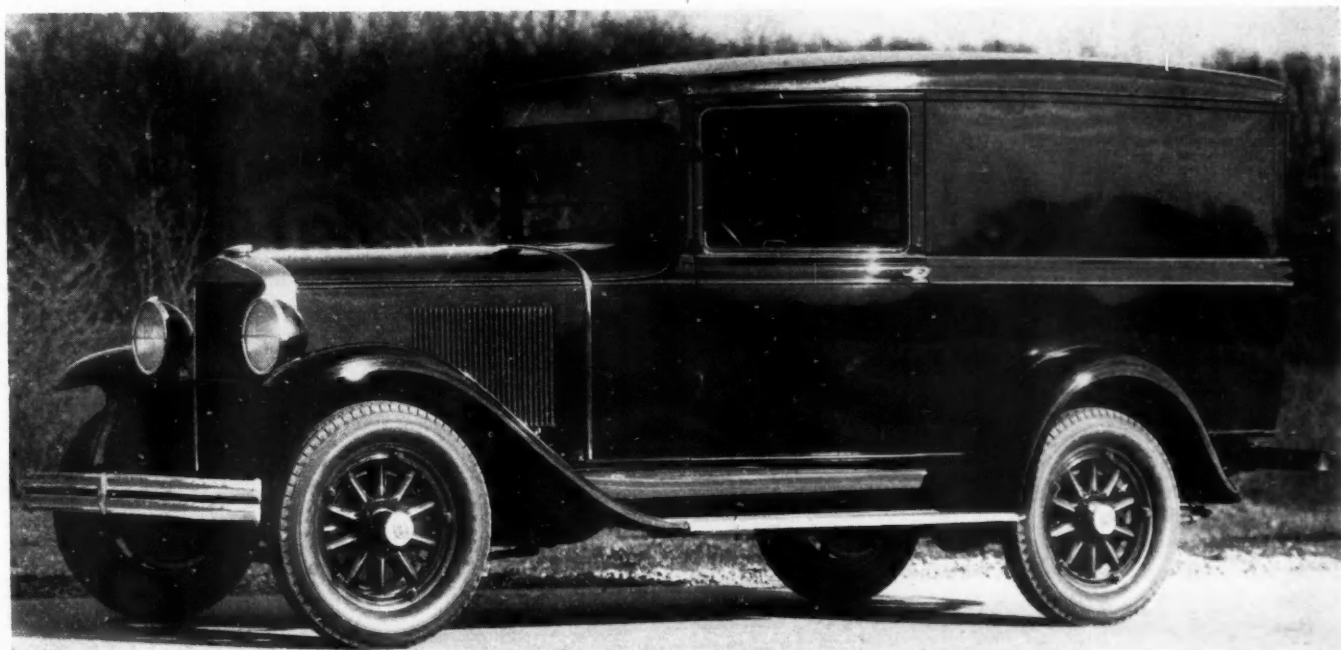
Front doors are exceptionally wide. The driver's seat is adjustable. To the right of the driver's seat is a trap door providing access to the tool compartment and the battery. Rear wheel housings, instead of being

shortened to incase the wheel only, are full length, so that packages can be slid back from the front, the design being such as that only very little loading space is sacrificed. Side panels are lined with sheet steel on the inside to the belt line, with wood above, while the slatted roof has ribs fairly close together. Insides of rear doors also are covered with sheet steel, and ribbed to prevent drumming. The metal floor board jointing strips, instead of being of the conventional T-shape, are of I-section, with the lower flanges recessed into grooves in the floor board edges in such a manner as to provide for expansion and contraction, and yet maintain a sealed joint.

The same attention to sealing is noted on the wide rear doors. At their lower edges these are provided with metal strips which fit into metal grooves below the rear body cross-sill when the doors are closed. A rubber weather strip on the doors and dowel pins fitting into dowel holes in the same cross-sill also contribute toward the same end.

Rear door windows are of maximum width to give good visibility for the driver toward the rear. The left half of the rear door is provided with a spring catch to lock it automatically when it is closed. The lock in the right half door handle is operated with the same key as the coincidental lock on the steering wheel.

To protect doors when open, as well as the bodies



Three-quarter front view of the Paige panel delivery car

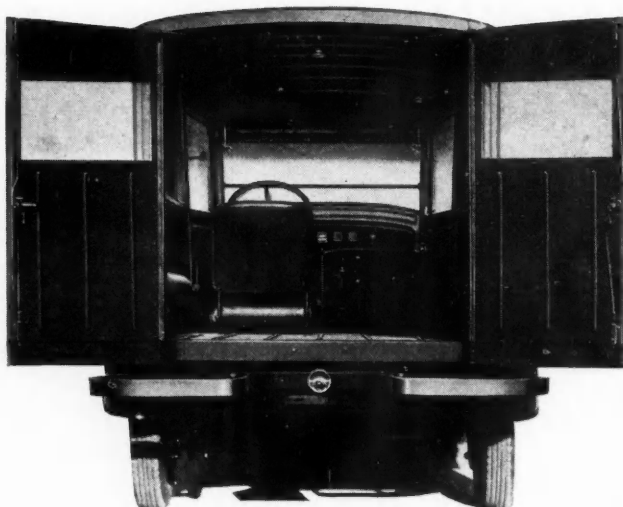


themselves when backing up to a loading platform, an unusually large and novel bumper arrangement has been worked out. This bumper attaches to a malleable bracket bolted to the rear bumper mount on the passenger car frame, and is similar in appearance to rather sweeping bumperettes. There is a tie bar between the two bumper halves below the rear body sill, this bar carrying the tail light at its center. With this design of bumper there is no interference with the approach to the rear doors themselves.

The malleable brackets which carry the rear bumper also serve as additional supports for the rear body overhang.

In the chassis there is a standard three-speed transmission instead of the four-speed unit used on the Special Six passenger car. Its gear ratios are 3.543 to 1 in low, 1.961 to 1 in second, and 4.303 to 1 in reverse. A rear axle reduction of 4.9 to 1 gives an overall reduction in low of 17.36 to 1.

Engines are identical with the Special Six except for the omission of the Lanchester damper and with their bore and stroke of  $3\frac{1}{4}$  by  $4\frac{1}{2}$  in. they develop 76 hp.



*Interior of Paige showing the adjustable driver's seat, full length wheel housings, and the manner in which bumpers protect rear doors and still provide access to the platform for loading*

at 3200 r.p.m. Clutches as on the passenger car are single plate and of Long manufacture. They have 11 in. driving plates. Wheels are 19 in. in diameter, with 4 in. rim width and 5.50 in. cross-section 6-ply tires. Chassis weight is 2465 lb. As regards springs, the only difference between the commercial and the passenger car chassis is that in the former they have a slightly higher rate. A transmission brake supplements the four-wheel brakes and has a drum 8 in. in diameter with 2 in. face width.

Instead of a rear outlet for the exhaust pipe, this outlet is at the side, just ahead of the right rear

wheel, so that fumes will not interfere with the loading of the vehicle from the rear. The gas tank filler is extended to the right side of the body at the rear.

In addition to the two body types offered, chassis are also available, the list price being \$860. Front and rear bumpers are \$15 extra.

It is expected that Graham-Paige distributors will be fully sampled with commercial cars by January 18, when public announcement of the introduction of these vehicles will be made.

## American Austin Differs from British Design

(Continued from page 43)

50 m.p.h. at the usual top speed of closed models. Gas consumption is stated as being around 40 m.p.g., and oil consumption so low that refilling the 2-qt. crankcase every 1000 miles is ample for lubrication requirements.

Further details of the engine include a detachable head, with L-head valve arrangement and valves approximately 1 in. in diameter. Crankshafts are mounted on a ball bearing at the front and a roller bearing at the rear. Crankpin lubrication is by what is known as the "jet" method, a jet of oil being injected into the crankcheeks each revolution. Manifolds are of the downdraft type.

Clutches are single plate, with somewhat unusual construction, due to the fact that the clutch shaft is not piloted into the rear end of the crankshaft. Transmissions are of the three-speed variety, and of standard design, except that the countershaft as well as the main shaft is mounted in anti-friction bearings. Transmission case as well as crankcase are aluminum alloy castings. A fabric universal is found at the front end of the propeller shaft, and a metal joint at its rear, where it enters the torque tube, supported by a frame cross-member. The torque tube itself is attached at this point to the frame by means of a ball joint to relieve twisting stresses under one-wheel kick-up.

Rear axles are  $\frac{3}{4}$  floating in design, with a spiral bevel final drive. Bearings are of Timken manufacture. Front axles have reverse Elliott ends. Brakes

are of the four-wheel, two-shoe, internal expanding cable-operated type, using a single cross-shaft to which are connected both the pedal and emergency lever.

Frames as previously mentioned are practically of triangular design, with the wide end at the rear. This construction naturally eliminated much of the gusseting, etc., which is required with rectangular types of frame construction, since the triangle is inherently rigid in itself. Springs are quarter elliptic at the rear, in line with the side channels, and transverse at the front, giving the body and frame assembly virtually a three-point mounting.

Steering gear is of the worm and full worm wheel type, adjustable for wear. Steering connections are quite large in diameter for the weight of the car, probably a large factor in keeping the Austin free from front-wheel shimmy. Turning circle diameter is 32 ft. The gas tank in the Austin is mounted under the cowl for gravity feed to the carburetor.

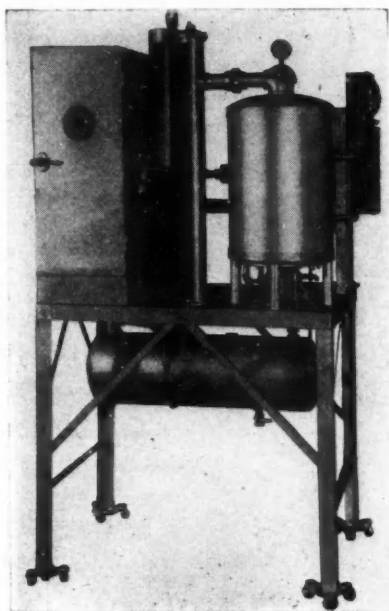
As to overall dimensions, the car has a total length of 115 in. Its height is around 59 in. maximum, tread is 40 in., and road clearance at the lowest point about  $8\frac{3}{8}$  in., in the latter respect the car having a higher clearance than quite a few standard American makes. Standard equipment includes mirror, shock absorbers, windshield wiper, ignition lock and gasoline gage.

The next showing of the American Austin, again semi-private in character, will be at the Hotel Sherman during the Chicago show week.

# New Automotive Developments

## Junior Oil Reclaimer

THE Junior model oil reclaimer recently marketed by the Skinner Automotive Device Co., Inc., Detroit, Michigan, is designed to restore fully the lubricating quality of motor oil.



Skinner Junior oil reclaimer

This model is all-electric, fully automatic in action and is said to be safe and practical for garage installations. This reclaimer is a compact machine embodying a complete purification process. It operates under a high vacuum, reducing the temperature required to distill off gasoline and liquid impurities. In operation, crankcase drainage is allowed to settle in two settling tanks so as to separate out some of the water and solid matter. Then,

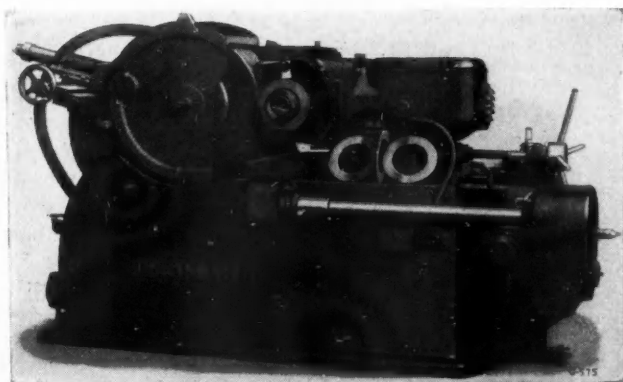
when the oil in the electric still has reached the proper temperature, the vacuum draws in a continuous supply of used oil which starts on its way through the reclaiming process.

The capacity of this machine is  $2\frac{1}{4}$  gallons of refined oil per hour. Overall dimensions excluding barrels are: Height, 6 ft.; width,  $2\frac{3}{4}$  ft.; length,  $3\frac{1}{2}$  ft. Shipping weight, 900 lb.

## Cincinnati Plunge Cut Grinder

A SEMI-AUTOMATIC plunge cut grinder embodying an adaptation of the Centertype principle of grinding to centerless grinding units has been developed by Cincinnati Grinders, Inc., Cincinnati, Ohio.

The frame work of the No. 3 Centerless Grinder is the basic unit about which the machine is constructed.



Cincinnati semi-automatic plunge cut grinder

In place of the regulating or feed wheel used on centerless grinders, an extended spindle is employed as a work arbor. Parts such as clutch facing rings, transmission stub shafts, disks of various types, etc., are mounted on a hollow mandrel which is placed on the spindle and secured by a bayonet lock. The movement of the work slide to the grinding wheel is cam controlled. By throwing a single hand lever in the front of the machine, the work starts to revolve and feed into the grinding wheel. The in-feed work slide is arranged for reciprocation up to  $\frac{3}{8}$  in. maximum and also for an up and down oscillation. An individual motor drives the reciprocation and oscillation units. A cam controls the oscillation, or up and down movement of the work slide.

This machine is capable of using the 24 in. diameter grinding wheel to the very limit of its cutting capacity. Work up to  $15\frac{1}{2}$  in. diameter can be accommodated on this new grinder. The 10 in. wide grinding wheel provides a maximum grinding area for handling a large number of parts in one grinding cycle. For truing the grinding wheels, the machine is equipped with a Ross type wheel dresser.

## AC Speedometer

A NEW pointer-type speedometer has been introduced by the AC Spark Plug Company of Flint, Mich.



The speed is indicated by a pointer moving over a scale of approximate horseshoe shape. The scale being graduated to 120 m.p.h., the 60-mile mark is in the straight-up position, and the speed, therefore, can be gaged by the position of the pointer above.

AC pointer-type speedometer

## Two New Klaxons

TWO new Klaxons are announced by the Klaxon Co., Anderson, Ind. The type 22 Klaxon, which measures  $14\frac{3}{4}$  in. in length, is described as having an entirely new warning note of great volume. A chrome-plated cornet type projector adds to its appearance. It is also available in matched sets of two horns which are selected and adjusted at the factory for blended tone.



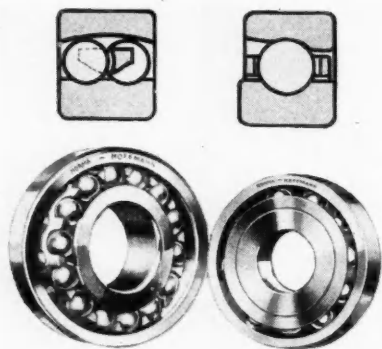
Klaxon 17 warning signal

The Klaxon 17 measures  $6\frac{1}{8}$  in. in diameter and is but  $2\frac{3}{8}$  in. thick. It is a magnetic type horn and is described as having a loud penetrating tone. A full chrome-plated front face over a bright colored diaphragm adds to its appearance.



### Norma-Hoffmann Bearings

THE Norma-Hoffmann Bearings Corporation, of Stamford, Connecticut, announces two recent additions to its line. The first of these is the Norma-Hoffmann double-row self-aligning ball bearing, in which



*Norma-Hoffmann bearings, showing detail (top) of raceways*

the self-aligning feature is secured by grinding the raceway in the outer ring to a spherical surface concentric with the centerpoint of the bearing. The ball cage is of extruded bronze designed to permit the maximum number of balls. The second addition is an angular contact combined radial and one-direction thrust bearing. This has a single row of balls, but the contact points between balls and rings are on a line which is not at right angles to the axis of the shaft, thus permitting the bearing to carry a higher thrust load. This is a closed type bearing and can be handled as a self-contained unit. Both of these bearings can be had in light, medium and heavy series, in all S.A.E. sizes.

### Aircoating Equipment

THE 200-gal. pressure tank and Paasche Type UUE spray gun are used at the Rouge plant of the Ford Motor Co., for spraying Inco Body Deadener on



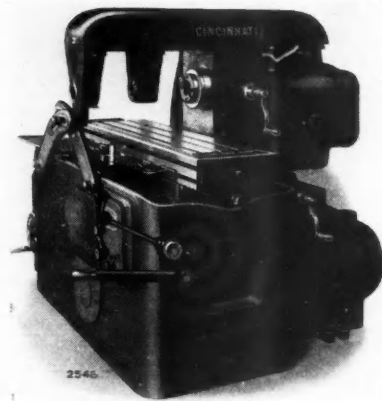
*Paasche pressure tank for deadening material*

the inside of the bodies to damp vibration or rumble. The Paasche F539 tank is mounted on a balcony above the body line and has a 3-in. pipe at the base that branches to each side of the body line. This tank has a 25-in. cover so that the deadening material can be hoisted and dumped therein directly from barrels. According to the manufacturers, the deadening material is sprayed on the interior of the body after it has been painted and all dings have been eliminated, because it is impractical to "ding" a body after the inside has a 1/4-in. coat of sticky deadening material. After the body is sprayed with deadener, it continues along the line and is upholstered and assembled on the chassis in the regular manner. It is not necessary to spray the entire inside area with deadener and the operator endeavors to keep this material away from the outside corners, door fixtures, etc., in order that the latter may be operated. When applied to the interior of the body, this material be-

comes tacky in a few minutes, but never gets really hard. The full deadening effect is not obtained until 24 hours after application.

### Cincinnati Hydromatic

THE addition of the 3-24 Plain and Duplex inclosed motor drive Hydromatics to the line of the Cincinnati Milling Machine Co., Cincinnati, Ohio, makes available a new size machine for this field. The principal units of the Plain machine are adapted from the standard No. 3 machine according to their plan of Standard Unit Construction. The spindle carrier unit, in combination with the spindle reverse and clutch unit, comprises the entire spindle drive which also contains multiple disk friction clutch and bevel gear reverse mechanism. Eight standard spindle speeds are available, ranging from 27 to 200 r.p.m.



*Cincinnati 3-24 Hydromatic*

A quill is regularly clamped in the spindle carrier around its full circumference. New style overarm braces, supported from the lower end of the outer arbor support and fastened to the sides of the bed, are offered for the first time on this machine. The double mounting of anti-friction bearings both front and rear on the spindle is retained.

The locked hydraulic feed unit, consisting of a variable displacement metering pump, a small booster pump, a gear pump and necessary control valves, forms the closing member of the rear end of the machine bed. This unit is the same as that of the larger sizes and is so standardized that it is completely interchangeable. Hand feed through a range of 0 in. to 40 in. per minute are made by shifting the single lever located on the feed unit. Plain machines are supplied with only one-way or two-way feed cycles, while the Duplex machines are only offered with the one-way cycle. A third lever known as the table stop lever, located at the side of the bed, starts and stops the table movement without affecting the table cycle.

Automatic control of all table movements, including automatic intermittent feeds of the table, is obtained by dogs, including new type reversing dogs set on the side of the table. Reversal time of any milling cycle has been considerably reduced, permitting the use of shorter feeding strokes.

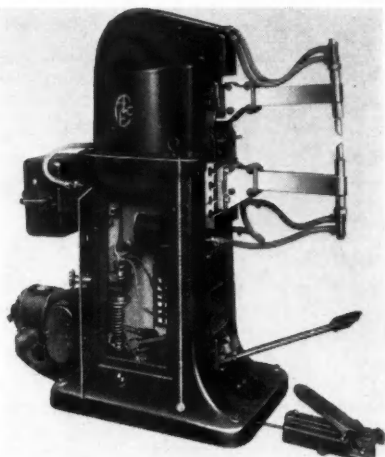
The pulley bracket and reverse box unit are automatically oiled by the splash system, while the spindle carrier unit is automatically lubricated by a pump in this unit. One-shot lubrication is provided for the lubrication of the chain drive unit for the hydraulic feeding mechanism.

The working table of this machine is 49 in. x 12 in. and has a travel of 24 in. The net weight of the 3-24 Plain machine is 5500 lb.; and of the 3-24 Duplex machine is 6500 lb. These machines also can be supplied with 30 in. table travel and then are known as 3-30 Plain or Duplex Hydromatics. The net weight of the 3-30 Plain machine is 7500 lb., and the Duplex machine 9000 lb.



## Electric Spot Welder

**D**ESIGNED for medium duty, the model M D spot welder recently announced by the American Electric Fusion Corporation, Chicago, Ill., has electrical capacity for welding two pieces of 3/16 in. stock. It is claimed that this machine will maintain 60 to 110 spot welds per minute within this range. Among the interesting features of design are the following: The automatic foot switch which regulates the sequence of operations, an auto transformer providing eight steps of heat for the materials within its capacity, and a clapper switch which relieves the breaking load on the main line switches.

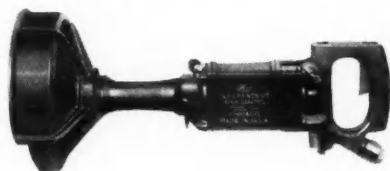


*A.E.F. type M D spot welder with motor-driven attachment*

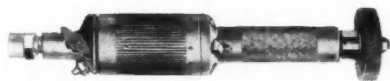
The M D welder is motor driven and automatically controlled. Alemite high pressure lubrication takes care of all bearing surfaces, while a built-in cooling system provides water cooling within one inch of the point of contact. This machine is made in six throat depths ranging from 12 to 32 in.

## Rotary Pneumatic Grinders

**A** NEW line of Pneumatic Grinders, based on the rotary principle, has been developed by the Independent Pneumatic Tool Company, 600 West Jackson Boulevard, Chicago. The outstanding advantages are said to be light weight, governed speed, increased power and lack of vibration. It is claimed that, due to the rotary principle, the air consumption and upkeep cost are greatly reduced. Thor Rotary Grinders are made in a complete line of sizes and types for all requirements. Two of these grinders are illustrated. No. 260G has a speed of 4300 r.p.m. and carries an 8 in. elastic bonded wheel or 6 in. vitrified wheel. Weight is 13½ lbs. No. 00 has a speed of 28,000 r.p.m. and is particularly adapted for touching up dies, etc. It carries a 1¼ in. Elastic Bonded Wheel and various pencils, sticks or special shapes. Weight is 2¾ lbs.



*Thor No. 00 rotary air grinder (top)*



*Thor No. 260G rotary air grinder*

## Electrode Feeding Device

**T**HE General Electric Company announces an improved feeding device on its automatic welding head to meet demands for higher welding speeds requiring heavier welding currents and larger sizes of elec-

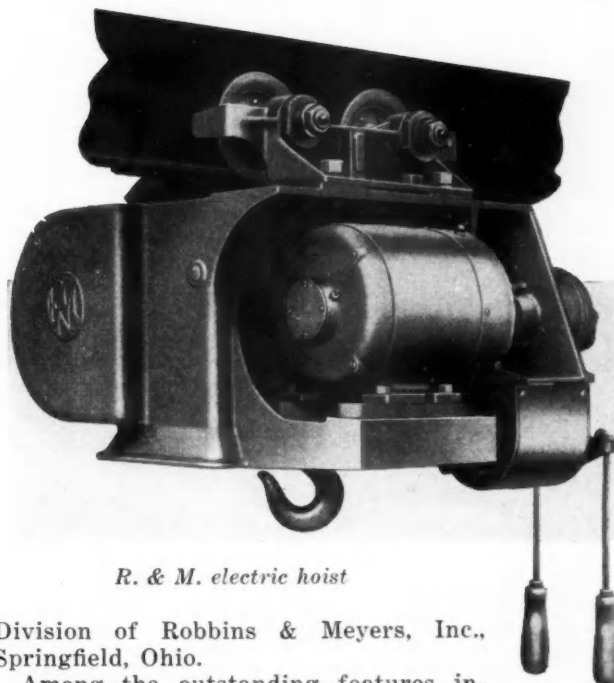
trode wire. This improvement consists of the addition of geared drive to what was formerly the idler roller in the feeding mechanism. In this way the large sizes of wire, which are stiff and hard to feed without excessive pressure on the driving rolls, are positively fed without slippage, at a regular rate and with only a moderate pressure between the driving rolls.

This device also makes it possible to use curved nozzles so as to reach into otherwise inaccessible places, and to weld in abnormal positions.

For the majority of applications 1/8 in. to 1/4 in. electrodes are used. The improved drive roll gears furnished on heads for these normal applications will accommodate wires of from 1/8 to 1/4 in. diameter without changing gears. Below 1/8 in. the gears are not needed and it is only necessary to remove one gear—that on the drive roll shaft. Sufficient pressure for these small sizes of wire can be obtained by screwing down the adjustment on the binding roll.

## Electric Hoists

**E**LECTRIC hoists in sizes ranging from 1/8 to 7½-ton capacity are announced by the Hoist & Crane



*R. & M. electric hoist*

Division of Robbins & Meyers, Inc., Springfield, Ohio.

Among the outstanding features incorporated in these new hoists are: An improvement in design which results in a saving of both weight and space in all dimensions, headroom included, a cast steel trolley adjustable to nine sizes of I-beams, a safety-constructed inclosed bottom block which retains the rope on the sheaves and shrouds all parts, main frame of Armite alloy metal, produced in their foundry by electric process, and aluminum finish applied throughout which is said to provide lasting protection against damage from exposure.

**A**CCORDING to the annual report of the Minister for Air of Great Britain for the year 1928, which was issued recently, there was a considerable increase in commercial flying in Great Britain during that year as compared with 1927. The number of miles flown by commercial airplanes in 1928 totaled 1,011,000, as compared with 769,000, and the number of passengers carried 27,659, as compared with 18,874.

# THE FORUM

## Composite Herringbone Gears

Editor, AUTOMOTIVE INDUSTRIES:

The composite herringbone gear is a new development that marks extraordinary progress in the long struggle to produce quiet automobile transmission gears.

At first sight the most outstanding innovation is that one-half of the gear has one pitch while the other half has a different pitch. This difference in pitch is sufficient to make the gears readily distinguishable. The following will show what these gears will do:

Automobiles with transmissions having composite herringbone gears have been driven under all possible conditions, from low to high car speed and from no load to full load on the drive, a change then being made to over-drive or coasting action. The driver often shifted to throw the power through the gears and then to direct-drive, without the passengers in the car being able to distinguish by sound when the gears were being used and when they were not.

When designing these gears for automobile transmissions comparatively fine pitches were used, ranging from 9 to 18 normal diametral pitch. The ratio of one-half of a pair of composite herringbone gears must be exactly the same as the ratio of the other half. Varying helix angles of from 27 to 51 deg. were tried.

This gear, while avoiding the exacting requirements, engineering and practical difficulties of internal gears, adapts itself to the desired ratio and design, and utilizes many of the characteristics of other types of quiet gears, such as spur, helical, and spiral bevel, viz., deep teeth, long addendum, conjugate tooth contact, generous overlap, long line of action plus that precision refinement of supplemental addendum bearing on the driving profile of the tooth that invariably is a feature of quiet running spiral bevel rear-axle gears. This highly important addendum bearing is produced by the design and grinding of the cutters, and the sizes of the mating gears.

Not the least of the factors in this combination for quiet power transmission is the action of a gear of one particular pitch secured to a gear of a different pitch, so that the vibrations set up by one-half of the gear are nullified by the action of the other half, on the principle of the interference of sound or non-harmonics. This principle being applied at the source, carries the gear through the critical periods without sound-

causing vibrations.

This gear was invented and patented by H. T. Thomas, chief engineer of the Reo Motor Car Co., and applied and developed by John Bethune and others of the Reo staff.

ARTHUR NICHOLS,  
Gear Research Department,  
Reo Motor Car Co.

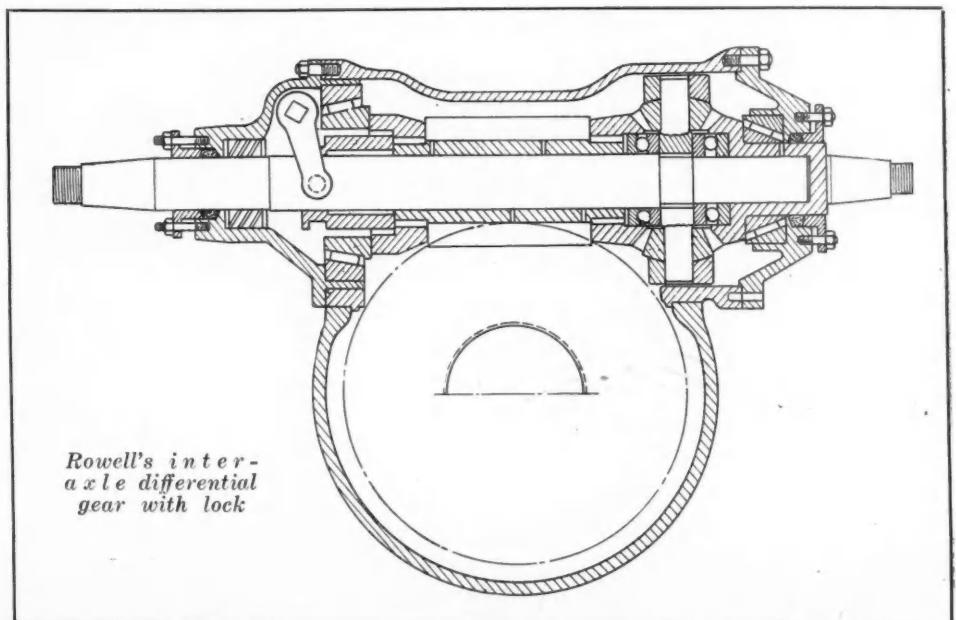
Illustrations of the new Reo transmission with composite herringbone gears appeared in *Automotive Industries* of Aug. 31, pages 305 and 306.—EDITOR.

## Inter-Axle Differential

Editor, AUTOMOTIVE INDUSTRIES:

As a matter of possible interest the writer encloses particulars of his third-differential drive for buses and trucks, which we are now building and operating in Sydney, the important features being a compact and unusual arrangement of the third-differential drive. If desired it is possible to include means for locking and unlocking the drive for boggy road conditions, using the unlocked differential on hard roads. Abnormal tire mileage is being registered with the third-differential drive, which provides an "all-purpose" six-wheeler.

C. VICTOR ROWELL,  
Burwood, Sydney, N.S.W.  
Australia.



Rowell's inter-  
axle differential  
gear with lock

# News of the Industry

PAGE 59

VOLUME 62

Philadelphia, Saturday, January 11, 1930

NUMBER 2

## Marmon Group Told of New Sales Policy

Factory-Dealer Relations to  
be Subject of Definite  
Agreement

NEW YORK, Jan. 8—Thirteen high points in the working arrangement of Marmon Motor Car Co. with its dealers were revealed by Thomas E. Jarrard, general sales director at the annual dealer luncheon attended by some 400 at the Commodore Hotel, here today. Three sales appointments also were announced by Jarrard (see Men of the Industry, this issue). The event was addressed by G. M. Williams, president; R. R. Heiskell, vice-president, and by T. H. Miller, newspaper editor of Wilmington, Ohio, as well as by Jarrard.

High points in dealer arrangement which became effective Dec. 1 follow:

1. New models to be introduced hereafter always at New York show and to be carried for one year without change except for possible refinement in midsummer.
2. Increased discount.
3. Production to meet seasonable demand.
4. Production to be handled so as to eliminate clean-up period.
5. A profit on freight and advertising in the delivered prices.
6. No special fleet division, as fleet business will be handled by distributors and dealers direct.
7. Six months' price guarantee.
8. Repurchase agreement on cars and parts.
9. No cancellation of any franchise except by authority of an executive of the manufacturer.
10. Sales merchandising plan which, although dealer contracts are written on town and vicinity basis, virtually give a closed territory to those dealers who can work it.
11. No infringement. The distributing franchise is exclusive as to wholesale, non-exclusive as to retail.
12. The dealer town and vicinity franchise is non-exclusive excepting as to the corporate limits of the town or village in which the dealer is located.
13. A mutually cooperative advertising plan.

## Mexican to Get Copy of Lindbergh Plane

DETROIT, Jan. 8—A duplicate of Charles Lindbergh's new ship, the Lockheed Sirius low-winged monoplane, is now being constructed at the Lockheed division of the Detroit Aircraft Corp., Burbank, Cal. The plane will be used by Colonel Roberto Fierro of the Mexican air force and Commandant of Balbuena Field in Mexico City on a 10,000-mile good-will flight which will take him to Washington, New York, Havana, South America and over the South Atlantic to Paris and London. The proposed flight will start about March 1.

## S.A.E. Officers Will Be Installed at Dinner

NEW YORK, Jan. 9—At the annual dinner of the Society of Automotive Engineers to be held here tonight at the Hotel Pennsylvania, officers of the association nominated at the Saranac Lake Convention, in June, 1929, will be installed. Edward P. Warner, editor of *Aviation* and former assistant secretary of the Navy for aeronautics, will take office as president, to serve for one year. Vice-presidents representing various divisions are as follows, according to a list furnished by the society: Representing Aircraft Engineering, Chance M. Vought, Chance-Vought Corp.; Aircraft Engine Engineering, Bruce G. Leighton, Wright Aeronautical Corp.; Diesel Engine Engineering, O. D. Treiber, Treiber Diesel Engine Corp.; Motor Truck Engineering, Arthur J. Scaife, White Motor Co.; Passenger Car Engineering, George L. McCain, Chrysler Corp.; Production Engineering, John Younger, Ohio State University; Transportation and Maintenance Engineering, F. C. Horner, General Motors Corp. C. B. Whittelsey, Jr., will become treasurer.

Members of the council elected for two years will be: Ralph R. Teeter, Perfect Circle Co.; Frederick K. Glynn, American Telephone & Telegraph Corp.; Arthur W. S. Herrington, Coleman Motors Corp.

### Editor's Note

Financial Notes, scheduled for appearance on this page, have been omitted owing to lack of space, but will appear next week as usual.

## Salesman is Lauded at N.A.C.C. Banquet

Graham Tells Chamber His  
Place is Important in  
1930 Picture

NEW YORK, Jan. 7—Tribute to the profession of salesmanship to which he said the automobile industry must give greater consideration in 1930 was paid here tonight at the annual banquet of the National Automobile Chamber of Commerce in the Commodore Hotel by George M. Graham, vice-president of the Willys-Overland Co., whose topic was "Tuning Up for 1930."

Mr. Graham was introduced to the gathering of more than 1200 persons, among whom were many of the outstanding figures of the automobile industry, including Henry Ford and Edsel B. Ford, by Alvan Macauley, president of the Chamber. His speech was followed by one of welcome and of greeting to the assembled representatives of the automobile industry delivered on behalf of the City of New York by its mayor, the Hon. James J. Walker.

"If there has been any depression in your business," continued the mayor, "it hasn't been noticed in our streets." He then commended the pioneers of the automobile industry for having had greater vision in the planning and manufacture of automobiles than former authorities had had in laying out New York City to accommodate the new vehicle.

"The automobile industry," the mayor continued, "has taught us the importance of coordination in public improvements, which was not even known a decade ago. We are going to spend \$500,000,000 to make your wheels run more easily and frequently."

## Blees is Transferred

NEW YORK, Jan. 6—W. A. Blees, president of the Motor Accounting Co., a subsidiary of General Motors Corp. having as its function the introduction of an actual cost accounting system among General Motors dealers, has been transferred to the Oakland division as assistant general manager of the Oakland Motor Car Co.



### Overseas Visitors to New York Show Hear Discussion of American Dealer Problems

NEW YORK, Jan. 7—Sales and financing problems as they are met in this country were explained to overseas visitors at the International Day exercises held at the National Automobile Chamber of Commerce yesterday afternoon in connection with the show. Following an informal reception in the morning and a buffet luncheon at noon, Alvan Macauley, president of the Chamber, welcomed the overseas guests at the opening of the afternoon session. John N. Willys, chairman of the Export Committee of the Chamber, was scheduled to preside over the meeting, but due to a number of other engagements was present only for a short address of welcome, and Alfred Reeves, general manager of the Chamber, acted in his stead as chairman of the meeting.

In the discussion of financing of retail automotive sales, Victor L. Brown, president, and C. C. Hanch, general manager, of the National Association of Finance Companies, outlined the history and experience of financing practice in this country. Both Mr. Brown and Mr. Hanch urged the advisability of setting a minimum down payment of one-third of the total cost so that the purchaser would have a real equity in the property bought, and the limiting of instalment payments to twelve months so that payments on the car would be enough faster than the depreciation on the car to hold the buyer to his contract. For used cars, Mr. Brown pointed out that the desirable down payment was 40 per cent of the cost as proven by experience in this country.

Mr. Hanch quoted a number of figures showing the tendency in financing history during recent years in this

country in the way of repossession losses, repossession ratios and the degree of faithfulness amongst financing companies in observing the minimum requirements. Warren E. Griffith, president of the National Automobile Dealers Association, also gave a brief talk, welcoming the visitors.

C. A. Vane, general manager of that association, outlined the functions of national and local dealer associations. These functions, he pointed out, are two-fold: First, economic, and second, legislative. The economic functions are usually the more important for a dealers' association, and Mr. Vane gave some figures which the N.A.D.A. has come to believe are desirable minimum factors in the way of earnings and analyses of earnings.

One of the evils that the N.A.D.A. has tried to eliminate in this country, Mr. Vane pointed out, is the system of subdealerships whereby subdealers are given to competing against each other to get business. "The subdealer has done more to disrupt business than the used car," Mr. Vane said. The establishment of exclusive territories is another thing which the dealer associations should strive to attain, he pointed out.

C. H. Larson, chairman of the board of the Peerless Motor Car Co., in his capacity as president of the Automotive Merchants Association of New York, Inc., headed a forum on effective retail merchandising. He was assisted in this forum by Harvey A. Turnure, head of the Turnure company of New Rochelle, Chrysler dealer, who emphasized the need of effective merchandising of the service facilities of the dealer; and by T. E. Jarrard, director of sales of Marmon Motor Car Co.

### Bureau of Standards Has Flow Resistance Meter

WASHINGTON, Jan. 7—Many oils at low temperature are known to show a very marked breakdown of structure, according to Ronald Bulkley, Bureau of Standards. These oils flow much more readily after working than in the original congealed condition. When starting an automobile engine in cold weather, the resistance to flow which the oil offers before its plastic structure is broken down is an important consideration in the proper lubrication of the working parts of the machine. After the machine has been running a few minutes, the plastic structure of the oil is destroyed, and the consistency of the worked or broken down product is the important feature.

By the use of the consistometer, designed by Mr. Bulkley, it is possible to obtain numerical values for the resistance which the oil offers to flow both before and after it has been broken down. It has been found that

certain oils behave very much like glue or gelatin, in that the longer they are cooled at a definite temperature, the stiffer they become. An oil which is plastic, and which has been thoroughly worked to a relatively thick consistency at a low temperature, may regain a large measure of its original high resistance to flow if it is allowed to stand undisturbed at the temperature of working.

### Timken Plant Resumes

CLEVELAND, Jan. 7—Operations were resumed at the Timken Roller Bearing Co. plant today as 4000 workers, idle since Christmas, returned to work. Officials said that orders were coming in satisfactorily and it was expected that the plant would be operating at 75 per cent of its capacity at the end of the week.

### Carboloy Opens Branch

NEW YORK, Jan. 9—The Carboloy Co., Inc., has opened a branch office in Syracuse, N. Y.

### Drives Diesel-Engined Car to New York Show

NEW YORK, Jan. 6—Driving a standard automobile chassis equipped with a four-cylinder Cummins Diesel engine, C. L. Cummins, president of the Cummins Engine Co., Columbus, Ind., traveled from Indianapolis to New York, a distance of 792 miles, on \$1.33 worth of fuel. Mr. Cummins arrived at the Roosevelt Hotel at 4.45 p. m. Monday, having left Indianapolis at 1.35 a. m. Saturday.

The engine in the car was a four-cylinder, four-cycle Diesel type and the final drive on the chassis at a gear ratio of from 2½ to 1. The car was equipped with a governor which prevented a speed in excess of 55 m.p.h. and an average speed of 31 2/3 m.p.h. was maintained during the run. The fuel consumed was 30 gal., an average consumption of 26 2/5 miles per gallon.

According to Mr. Cummins, the run was made merely to demonstrate the flexibility of the Diesel type of engine. He expects to drive the car to Philadelphia to attend the automobile show and then to continue to the National Road Builders Convention and Exposition at Atlantic City.

### Lycoming to Complete Large Expansion Project

WILLIAMSPORT, PA., Jan. 7—Entrance of the Lycoming Mfg. Co. into marine engine field with a line of 4, 6, 8 and 12-cylinder marine engines, has been announced by W. H. Beal, vice-president. The Horace E. Dodge Boat and Plane Corp. has awarded the Lycoming Mfg. Co. an exclusive contract for engines to be used in Dodge boats during 1930.

An expansion program which involves an investment of nearly \$1,500,000 will be completed early in 1930, according to Mr. Beal. On the completion of this program the manufacturing and production facilities of this company will have been increased about 50 per cent. In addition to its regular line of truck engines, Lycoming will offer an entirely new line in 1930 including a 4-cylinder, 45 hp. engine, a 6-cylinder, 85 hp. engine and an 8-cylinder, 150 hp. engine. These engines are expected to be in production early in February.

### To Have American Papers

BERLIN, Jan. 8—Sixty papers by Americans devoted chiefly to questions concerning the market for power have already been announced for presentation at the Second World Power Conference to be held in Berlin some time during 1930. The majority of the papers deal with the distribution and utilization of electricity.

### Publish Aeronautic Book List

NEW YORK, Jan. 7—The Aeronautical Chamber of Commerce of America, Inc., has recently issued Library Bulletin No. 107 which is an index to current aeronautical publications.

## Musselman Sees Fewer Dealers, More 1930 Profit

NEW YORK, Jan. 7—A decline in the number of automobile dealers in 1930 was predicted by C. A. Musselman, president of the Chilton Class Journal Co., in an address before the New York Show meeting of the National Automobile Dealers Assn. This decline, Mr. Musselman pointed out, should react to the advantage of those dealers who remained, as it may result in an increase in average volume per dealer despite the expected decrease in total sales. He also emphasized the importance of dealers developing the maintenance and equipment business, presenting figures to show how highly profitable the after-market can be to the dealer who cultivates it.

A resume of the recommendations made by the N.A.D.A. to the sales managers committee of the National Automobile Chamber of Commerce was presented by President Warren E. Griffith. These recommendations included a return to a closed territory policy, factory junking plans, a mark-up on freight, an insistence by the factories that their dealers make a fair return and that they handle used cars without a gross loss. Mr. Griffith also urged the necessity for the compilation of accurate statistics monthly on retail sales and inventories of both new and used cars.

Overproduction and the used car problem were discussed by C. E. Eldridge, general sales manager, Reo Motor Car Co. Other speakers included Edward Payton, Dr. J. H. Green of the Studebaker Corp., and M. D. Graham, of the Michigan Automotive Trade Association.

## Automotive Employment November Index Drops

WASHINGTON, Jan. 10—Employment in 215 reporting automobile manufacturing plants declined 17 per cent to 324,451 in November from 392,141 in October and the weekly payroll dropped 22 per cent to \$10,088,110 from \$12,941,283, according to the Bureau of Labor Statistics, Department of Labor. Employment in 36 reporting automobile tire manufacturing plants decreased 13.6 per cent to 43,200 in November from 49,986 in October and the weekly payroll declined 17.9 per cent to \$1,165,556 from \$1,418,848.

When compared with November, 1928, the greatest decrease in employment reported by any of the industries was that in automobiles, which showed a decline of 23.1 per cent in November, 1929, and next came automobile tires, which showed a drop of 20.9 per cent. The respective decreases in payrolls were 26.4 per cent and 29 per cent.

### Proposes Highway Commission

WASHINGTON, Jan. 10—Representative Carter, Republican, California, has introduced a bill proposing the creation of a commission to study the most desirable routes for transcontinental highways.

## Graham Dealers Told That the Factory Will Not Force Shipments During 1930

NEW YORK, Jan. 8—Further explanation of the recently announced Graham-Paige policy of keeping production closely aligned with retail sales demand and a pledge by the factory not to ship a single car during the new year unless ordered by a distributor were the high notes of the annual luncheon given by the Graham-Paige Motors Corp. to its dealers and distributors at the Biltmore Hotel here today. The speakers at the event, which was attended by more than 600, were Joseph B. Graham, president; Robert C. Graham, vice-president; Ray A. Graham, secretary-treasurer, and Theodore F. McManus, head of McManus, Inc., advertising agency now representing the company.

F. R. Valpey, general sales manager, who made the opening address and introduced the others, said that the company has 577 more dealers now than a year ago, bringing the total to some 3000. Mr. McManus expressed his pleasure in his new association with the company and outlined his method of advertising which is to be used in behalf of Graham-Paige. This method, which he said had been correctly termed by someone as "dramatizing the Golden Rule," consisted of the policy of placing

a series of "continuous" messages before the public in which truth was a prime essential.

Following Mr. McManus' speech, Joseph B. Graham urged the dealers to visit the factory in Detroit, to study the improvements made in manufacturing facilities during the past year and to make even closer contacts with the executives at the plant. He pointed out that the present "822" series of cars is not radically new and that it has all the fundamentals of the former "615" with two more cylinders added. In the turning out of a car of such merit that the dealer can take it back with satisfaction two years later, the company believes it is aiding its dealers in the used car problem, the president stated.

Ray A. Graham predicted that 1930 will close with greater satisfaction to factory and sales organization than did 1929. Robert C. Graham, who made the final address of the event, announced that he believed the problem in merchandising of Graham cars this year is to be mainly one of the individual, explaining that the factory was fully prepared to furnish an adequate supply and that it was pledged to limit shipments.

## York-Hoover Co. Enlarges Body Plant by Purchase

YORK, PA., Jan. 6—The York-Hoover Body Corp., manufacturer of automobile bodies, has acquired about 40,000 additional feet of floor space for their York plants through the purchase of three brick buildings from the York Knitting Mills Co.

The acquisitions give the corporation five plants in York, all grouped about a 13-acre tract with outlet on the Maryland and Pennsylvania Railroad, with 4 acres for future expansion. Two of the new buildings are three stories high, 100 by 50 ft., the other is two stories high, 100 by 50 ft.

The commercial body corporation was formed two years ago by the merger of the York Body Corp. and the Hoover Body Co. At the present time it employs 600 persons and is operating on full-time basis, 55 hours each week.

## Borg & Beck Plant Adding

CHICAGO, Jan. 7—Within two weeks more than 39,000 sq. ft. of manufacturing space will be available in the new \$130,000 plant addition of the Borg & Beck Co., a subsidiary of the Borg-Warner Corp., which is being rushed to completion. The new structure, of reinforced concrete and brick, is three stories high. The first floor will be utilized for clutch production, while the second and third will be used for offices and servicing, respectively. This building permits a noticeable produc-

tion increase on all types of the company's products.

## Dart Truck Enlarging

KANSAS CITY, Jan. 6—The Dart Truck Co., manufacturers of the Dart line of trucks, has contracted for one-third more factory space as a part of its 1930 expansion program. A 15-year lease on the factory addition has been taken. The company also is adding a 1½-ton truck to its line, which now includes 1½, 2, 2½, 3, 4, 6 and 10-ton types.

J. P. Whitaker, president of the Whitaker Battery Supply Co., became a heavy stockholder in the company a year ago, and is now president. M. W. Cline, vice-president and general manager, says the company is working at full capacity and having no trouble in selling the entire factory output. The trucks are used largely in the oil fields of Kansas and Oklahoma.

### Rate Cases Dismissed

WASHINGTON, Jan. 10—Rates on automobile trucks and chassis, in carloads, from Rochester, N. Y., and Evansville, Ind., to Tulsa, Okla., charged on shipments prior to July 14, 1928, were found not unreasonable by the Interstate Commerce Commission in an opinion made public on Wednesday. The rates were attacked by the Selden Truck Corp. and others dealing in automobile trucks and chassis at Rochester and Tulsa, and the Norval Motor Corporation, Evansville, Ind., and repatriation was sought. The commission ordered the complaints dismissed.



## British Railways Bid For Bus Line Control

LONDON, Dec. 15—The four big railroad groups of England, Wales and Scotland have for some time past been active in negotiating for the purchase of control of bus companies and have already acquired a preponderating interest in several large concerns. But by far the biggest deal yet attempted is now in progress, and if it matures it will give three of the four groups a very large interest in, if not actual control of, the operation of about 7500 buses outside the London area.

The London and North Eastern, London Midland and Scottish and Southern railroad companies are concerned; they have bid prices in some cases much above those ruling of late for up to 50 per cent of the shares of the numerous bus companies now controlled by Tillings, the British Automobile Traction Co., and the British Electric Traction Co., whose services cover nearly all the provinces in England, together with parts of Wales and Scotland. Simultaneously the railroads are negotiating for a working agreement to have effect whether or not the financial deal goes through wholly or in part.

## Equipment Show Date Set

NEW YORK, Jan. 8—Cleveland was selected today as the show and convention city of the Motor and Equipment Assn. and the National Standard Parts Assn. The beautiful municipal auditorium will be the scene and the dates will be as follows: M.E.A., week of Nov. 10, and N.S.P.A., week of Nov. 17. Under the new arrangements the manufacturer members of both organizations will set up their booths in the M.E.A. show and retain them through the N.S.P.A. show the following week. The new plans will be welcomed by the manufacturers holding dual memberships because of the economies made possible.

## Producing Machine Tools

SPOKANE, Jan. 7—The Production Engineering Company is getting into production on its Multimechanic line of machinery. The machines manufactured by the company are combination lathe, milling, drilling, boring, planing and shaping units. Arrangements have been made to market the output through Pacific Coast machinery sales houses this year. Sizes and modified forms of the machines as designed by A. R. Brewer, president of the concern, range in weight from 1000 to 150,000 lb. and costs of installations are estimated at from \$1,000 to \$100,000 for the various sizes.

## LaFrance to Have Chicago Display

NEW YORK, Jan. 7—The LaFrance-Republic Corp. will have a special display of the complete new line of LaFrance-Republic and American-LaFrance motor trucks at their Chicago branch, 2540 Indiana Avenue, during the Chicago automobile show, according to an announcement.

## Erskine is Elected Pierce-Arrow Head

NEW YORK, Jan. 7—A. R. Erskine, president of the Studebaker Corp., was elected president of the Pierce-Arrow Motor Car Company at a special meeting of the board of directors held in New York. Mr. Erskine succeeds M. E. Forbes, resigned. In addition to the election of Mr. Erskine as president it was also announced that Walter P. Cooke, of Buffalo, was elected a director to succeed Mr. Forbes.

Since acquisition of Studebaker's interest in Pierce-Arrow in 1928, Mr. Erskine has been chairman of the board of directors and chief executive officer, and it was announced that he will continue to hold this office.

The Pierce-Arrow Motor Car Co. reports sales of 256 passenger cars during December, 1929, against 62 in December, 1928, a gain of 313 per cent. Sales for 1929 were 9840 passenger cars against 5492 in 1928, a gain of 79 per cent. The 1929 sales broke the previous record of 6037 cars made in 1927 by 63 per cent.

## British Output Figure Is Estimated for 1929

By M. W. Bourdon

LONDON, Dec. 24—The following estimate of British production of passenger cars, trucks and buses is based, as in previous years, upon the Ministry of Transport returns of registrations and the Board of Trade returns of imports, exports and re-exports, with the addition of 10 per cent of the 1929 registration totals to allow for old cars scrapped.

Imports of chassis are partly estimated and partly official. The earlier official records did not separate passenger car chassis from "commercial" chassis, but this is now being done.

Assemblies of imported parts can only be estimated very broadly. The "parts" values given in the official returns include accessories, replacement parts and others not used for assembling complete chassis. My estimate of assemblies is therefore arrived at by reckoning each £100 of the value of parts imported to represent one set of components for a chassis assembly. This also is the plan I have adopted in previous years. The assembly figures are 150 per cent larger than those for 1928, which was to be expected on account of Ford assemblies increasing during the year. As in previous years my figures run from September to September. The figures appearing below, therefore, cover the period from September, 1928, to September, 1929.

	Trucks and Buses	
	Cars	
Total British production	163,950	43,150
Assemblies, imported parts	28,000	14,000
	191,950	57,150

## Spokesmen at Show Hit Unemployment Report

NEW YORK, Jan. 7—Spokesmen for manufacturers, dealers and motorists joined today in condemning the report of Detroit's committee on unemployment which recommended price decreases in winter, fewer models, abolition of automobile shows, for the promotion of a steadier employment program. The unemployment committee, appointed seven weeks ago by retiring mayor John C. Lodge of Detroit, blamed manufacturers for not keeping employment at an even level.

Alfred Reeves, general manager of the National Automobile Chamber of Commerce, and C. A. Vane, manager of the National Automobile Dealers Association, and several automobile club executives, agreed that any stabilizing measures such as those proposed by the Detroit committee were beyond practical consideration.

## Bolivia Plans Road Loan

NEW YORK, Jan. 8—Bolivia is considering a law which would provide that taxes from road service, gasoline taxes, and a certain portion of other revenues shall be set aside to cover the interest and amortization of a \$10,000,000 loan for road building, according to Cornelius F. Gundlach, of Gundlach Y Cici, La Paz, Bolivia, who is here attending the show. This law would further provide that a national road building company be organized to cooperate with the government in negotiating and guaranteeing the loan. Much progress has been made recently in the building of good roads in Bolivia, according to Mr. Gundlach, and the country is interested in extending its road building program as quickly as possible.

## French Plane Completed

WASHINGTON, Jan. 10—The all-metal, 28-passenger tri-motor, 1800-hp. Hispano-Suiza transport monoplane known as the "DB 70" has recently been completed at Bordeaux, the Department of Commerce learns from its Paris office. In the construction of this plane is found the principle of the habitable wing, according to the design of de Monge, engineer. This same principle is partially applied to the Junkers "J 38." The plane is so constructed that the motors are accessible during flight. Its cabins are well equipped for the easy carriage of 28 passengers. If necessary, 20 wounded or sick may be comfortably carried and given immediate aid.

## New Chrysler Six Promised

NEW YORK, Jan. 8—Chrysler dealers were told at a luncheon today that a new six, to retail at about \$850, delivered in the 1000-mile radius of Detroit, would be ready for shipment in 30 days. J. E. Fields, vice-president in charge of sales, said that the company will reduce filled stocks in dealers' hands throughout the coming year, and would bring gear production down to demand.



## Macauley Praises Show to N.A.C.C. Directorate

NEW YORK, Jan. 8—"As in the past, the automobile show has proved that it is a stimulating factor, starting the business of the year off in the right direction," Alvan Macauley, president of the National Automobile Chamber of Commerce, told the directors of that body at their regular monthly meeting held here today. "The predicted 1930 prosperity is at hand. Motor companies are limiting their production to current active demand. Weather conditions are favorable. In all sections of the country we find that the open winter has helped to make trade vigorous."

In the afternoon the export executives of the Chamber met under the chairmanship of John N. Willys. Under the leadership of Geo. F. Bauer, export manager of the N.A.C.C.; John V. Lawrence, European representative of the N.A.C.C.; and A. W. Childs, acting chief of the automotive division of the Department of Commerce, the trade prospects for 1930 were discussed. B. C. Budd, vice-president, Packard Motors Export Corp., headed a discussion of advertising and sales promotion literature. F. R. Lackey, Studebaker, chairman of the export rate committee of the N.A.C.C., headed a discussion of 1930 ocean freight rates and unboxed shipping service. H. S. Welch, president of the Studebaker-Pierce-Arrow Export Corp., discussed compensation and expenses of foreign representatives, and R. J. Archer, vice-president of the John N. Willys Export Corp., led a discussion as to what should be done about anti-American propaganda.

Roy D. Chapin, chairman of the Highways Committee, sent a cable of welcome to P. LeGavrain, secretary general of the International Road Congress, who will arrive on Friday aboard the S. S. France. Luncheon will be tendered Mr. LeGavrain by Mr. Chapin as president of the American Organizing Commission of the U. S. Government on Friday at the Metropolitan Club.

## LeBlond Has New Models

CINCINNATI, Jan. 8—Five new truck models, replacing earlier designs of the same capacities, have been announced by the LeBlond-Schacht Truck Co. Following is a list of the new units: Series 15, 1½-ton, \$1,795; Series 20-A, 2½-ton, \$1,950; Series 25, 3-ton, \$2,295; Series 30, 4-ton, \$2,975, and Series 40, 5-ton, \$3,400. Series 20, a 2-ton chassis, listing at \$1,895, is the only job in this range that continues the same as formerly. Series 60, 65, 70 and 75, the heavier units of the complete line remain unchanged in price and specifications. Six-cylinder engines, unit-mounted, four-speed transmissions, Zenith carburetors, full-floating rear axles and Lockheed hydraulic four-wheel brakes are common to all of the new models.

## Longevity Shown By German Airplanes

WASHINGTON, Jan. 10—Several planes which have seen long and varied service are still being used in Germany, according to a report received by the Department of Commerce from Assistant Trade Commissioner A. Douglas Cooke, Berlin. The Junkers "F13," originally named "The Nightingale" and still carrying the first German identification "D I," has completed 10 years of flying service during which time it has outlived six motors. It has made 2543 flights, has been in the air for 2403 hours and has covered approximately 350,000 kilometers all over Europe. Another German plane has more than 3140 hours to its credit and there are nine other planes which have been more than 2600 hours in the air.

## Steel Treators to Hear Paper on Body Needs

CLEVELAND, Jan. 7—"Some Notes on Sheet Metal and Strip Steel for Automobile Bodies," a paper prepared by Joseph Winlock and George L. Kelley of the Edward G. Budd Mfg. Co., Philadelphia, will be one of the featured presentations at the semi-annual meeting of the American Society for Steel Treating to be held in New York Feb. 7 and 8 at the Hotel Pennsylvania.

Another important paper will be presented by Charles McKnight, International Nickel Co., on the subject of nickel alloy steel forgings. Mr. McKnight is chief of alloy steel development of the International Co.

Three technical sessions will be held at the meeting, sessions of which will be held on Friday, Feb. 7, at 10 a.m. and 2.30 p.m., and on Saturday, Feb. 8, at 10 a.m.

## Harry M. Fancher

DENVER, COLO., Jan. 8—The death of Harry M. Fancher, financial adviser of the National Automobile Dealers Assn. members, and formerly treasurer of Tom Botterill, Inc., Hudson-Essex distributor in Denver, has been reported. Fancher was the designer of the budgetary control system for automobile dealers sponsored by the N.A.D.A. and was widely known and respected by the automobile dealers in all sections of the United States.

## Exhibit Space Allotted

ST. LOUIS, Jan. 8—Receipt of reservations from practically all of the leading manufacturers and aircraft groups in this country for space at the International Aircraft Exposition scheduled for Feb. 15-23 and sponsored by the Aeronautical Chamber of Commerce of America, has been announced. Official allotment of space by the National Show Committee of the Aeronautical Chamber will be announced about Jan. 10. Exhibitors will occupy more than 300 booths.

## Parker Bus Bill Meets Opposition in Committee

By L. W. Moffett

WASHINGTON, Jan. 10—The Interstate and Foreign Commerce Committee of the House of Representatives apparently is fairly equally divided in its attitude toward the bill of Chairman Parker to place motor bus passenger transportation under interstate commerce jurisdiction through the Interstate Commerce Commission. The Federal commission, under the bill as now drafted, would take over jurisdiction of the bus lines in interstate commerce in cooperation with state commissions. Cases developing from the present law would be passed upon by joint boards composed of representatives of the states in which any part of the interstate operation is conducted and decisions of the boards could be appealed to the Interstate Commerce Commission.

The bill, which has been before the committee for two years, was the object of hearings Wednesday and Thursday of the present week, these having been resumed from those held about one year ago. It is the plan of Chairman Parker to report the bill out at the present session of Congress but whether or not he will be successful in doing so remains to be seen. There is strong objection to the sweeping powers of the measure from within the committee itself as well as from outside interests, including operators of motor lines, railroads, electric lines, and some chambers of commerce as well as public utility organizations of the states are supporting the measure.

## Aerial Aids Reported

NEW YORK, Jan. 8—More than 8000 towns of from one to ten thousand population have identified themselves by proper roof markings as an aid to aerial commerce, according to a final report of the roof marking campaign just compiled by the Daniel Guggenheim Fund for the Promotion of Aeronautics. The campaign was recommended by Captain Emory S. Land shortly after assuming his duties as vice-president of the fund and was conducted by Milburn Kusterer until its completion Dec. 31.

## Litchfield on Arbitration Board

NEW YORK, Jan. 8—The appointment of P. W. Litchfield, president of the Goodyear Tire & Rubber Co., as a member of the board of directors of the American Arbitration Association has been announced by Lucius R. Eastman, president of the association.

## Into Succeeds Boynton

NEW YORK, Jan. 8—Henry Boynton, sales manager of the Aviation division of the Moto-Meter Gage and Equipment Corp., has resigned to accept a similar position with the Elgin Watch Co. He has been succeeded at more than 300 booths.

## Automotive Demand Helps Recovery of Steel Mills

NEW YORK, Jan. 9—Rolling and finishing mills have booked sufficient business from automotive steel consumers to enable them to operate at approximately two-thirds of capacity. This denotes a 35 per cent recovery from the low point of activities during the final quarter of 1929. Paradoxical as it may seem, this improvement in demand has been accompanied by dips in prices of some of the key descriptions of finished steel.

A representative tonnage of full-finished automobile sheets has been sold at 3.90c, Pittsburgh, as compared with the 4c price which was the current quotation during the period of most intensive dullness. Blue annealed sheets are more nearly quotable on a 2.25c basis for round tonnages than at the \$2 per ton higher price named a few weeks ago. Competition in black sheets is keen. The price range for hot-rolled strip, 6-in. and under, is now 1.90c to 2c and that for 6-in. and upwards is 1.80c to 1.90c, as compared with a former price range of 1.90c to 2c. Only very small lots now carry the 2c price. Large buyers of cold-rolled strip come in for a \$2 per ton concession from the ordinarily quoted 2.75c level.

The impetus to these downward changes in prices was furnished by announcement by the leading interest of a \$2 per ton cut in its tin plate price at the beginning of the year. Coming, as it did, six weeks after announcement of unchanged prices for the season, this retaliatory emergency measure against price-cutting by "independents" made a deep impression on the steel market in spite of the fact that tin plate has no relationship with other finished steel products, being in a class all by itself. Cold-finished bars are unchanged in price with the demand somewhat improved. The same holds true of automotive alloy steels.

**Pig Iron**—More and more releases and inquiries from automotive foundries are coming out. Quite a few of these have carried over sufficient tonnages from fourth quarter commitments to provide for their January melt, but interest in the market has decidedly broadened. The market's price structure holds steady, quotations remaining unchanged.

**Aluminum**—Better demand from automotive consumers is in evidence. While there has been little change in the hand-to-mouth buying policy of many of the automotive consumers, their operating schedules for January call for much better tonnages than during recent months, and the movement of piston and foundry metal is on the uptrend. Prices are unchanged.

**Copper**—Although buying by public utilities on a large scale is reported and export business has improved, there is still considerable skepticism among consumers as to whether the 18c price level can be maintained for any length of time. Demand for automotive brasses has broadened. Producers are optimistic over the better demand and believe that it furnishes sound support for their stabilized price policy.

**Tin**—Consumers showed better interest in offerings of Straits tin at 38½c at the beginning of the week. Negotiations to curtail output in the Straits Settlements con-

tinue. The metal's statistical position, however, is favorable to buyers.

**Lead**—Storage battery makers are buying conservatively. The market is steady and unchanged.

**Zinc**—Easy with Prime Western offered at 5.40c, East St. Louis.

## Pierce-Arrow Men Hear Firestone on 1930 Sales

NEW YORK, Jan. 4.—While it was addressed to distributors and dealers attending a Pierce-Arrow luncheon meeting at the Plaza Hotel today, Harvey S. Firestone, well-known tire manufacturer, gave a bit of advice applicable to the entire automotive industry.



Harvey S. Firestone

"When business gets tough," he said, "that's just the time for a real organization to make progress; to adjust itself to the condition, put its hands to the wheel and go forward with determination and enthusiasm."

Other speakers on the program emphasized this idea that aggressive selling in 1930 will be the determining factor in profitable operation.

A. R. Erskine, chairman of the Pierce-Arrow board, in sketching 1929 accomplishments declared the factory had made a profit of \$2,500,000 on a \$27,000,000 sales volume as compared with a loss in 1928 of \$1,293,000. He said he expected the factory to do a \$50,000,000 sales volume in 1930. George Willis, vice-president in charge of sales, brought out the fact that Pierce-Arrow began 1929 with 228 dealer points covered. The company enters 1930 with 512.

## Faulkner Urges Attention to Used Car Clearance

NEW YORK, Jan. 7—Auburn dealers were urged to concentrate a greater effort on successfully merchandising used cars at today's annual luncheon held in connection with the show at the Commodore Hotel. Roy H. Faulkner, vice-president of the Auburn Automobile Co., in speaking to these dealers, pointed out that in the average new car sale, as compiled from statistics taken from the trade, one item tending to reduce the net profit was the loss of 11.48 per cent in the sale of the used car involved in the trade-in.

By closer attention to the appraisal of used cars and more active merchandising of these used cars, he believed that this figure could be materially reduced and would result in higher net profit to the dealer on the sale of the new car; and, in fact, in many cases would mean the difference between a net loss and a net profit.

## Woolner Elected to Head Rubber Manufacturers

NEW YORK, Jan. 6—The Rubber Manufacturers Association, at its annual meeting at the Hotel Commodore yesterday, elected Samuel Woolner, Jr., president, Kelly-Springfield Tire Co., as its president for 1930; J. D. Tew, president, the B. F. Goodrich Co., first vice-president; C. D. Garretson, president, Electric Hose & Rubber Co., second vice-president; W. O. Cutter, vice-president, United States Rubber Co., treasurer; H. B. Delapierre, treasurer, Kelly-Springfield Tire Co., assistant treasurer; A. L. Viles, general manager, and A. D. Kunze, secretary.

The following were reelected to the board of directors for a term of three years: F. B. Davis, Jr., president, United States Rubber Co.; C. D. Garretson, J. A. Lambert, vice-president, treasurer and general manager, Acme Rubber Mfg. Co.; William F. Pfeiffer, president, Miller Rubber Co., and Samuel Woolner, Jr.

P. W. Litchfield, president of the Goodyear Tire & Rubber Co., who retired as president of the association in 1929, and F. A. Seiberling, president of the Seiberling Rubber Co., who retired as president of the association at this meeting, resigned from the board of directors, and C. A. Slusser, vice-president of the Goodyear Tire & Rubber Co., and W. S. Wolfe, vice-president of the Seiberling Rubber Co., were elected to fill the unexpired terms of Mr. Litchfield and Mr. Seiberling, respectively. As ex-presidents of the association, both Mr. Litchfield and Mr. Seiberling remain as ex-officio members of the board as long as they are connected with the association.

At the annual banquet, held in the grand ballroom of the Commodore, retiring president Seiberling presided, and he and the Honorable Theodore Christiansen, Governor of Minnesota, were the speakers of the evening. Signor Giovanni Martinelli, premier tenor, Metropolitan Opera Co., entertained the guests at the banquet with several operatic selections.

## Willys Sees Good Year

NEW YORK, Jan. 6—Assurance that the second and third quarters of 1930 will be "as good as we could ask for" was voiced today by John N. Willys, chairman of the board of the Willys-Overland Co., in speaking at the eighth annual luncheon that company has given to New York newspaper men, which was held this year in the Biltmore Hotel. March should see the opening of the busy period for the automobile industry this year, Mr. Willys said.

## Long Making Bus Clutch

CHICAGO, Jan. 7—Manufacture of a new type of bus clutch has been started by the Long Mfg. Co., Detroit, a subsidiary of the Borg-Warner Corp. This new product will be included as standard equipment by several bus manufacturers.



## Ambassador Warns French of Opposition to Tariff

PARIS, Dec. 30—Concern felt by American automobile manufacturers over French plans for an almost prohibitive tariff upon foreign automobiles, trucks and automobile parts has led Ambassador Edge to call these fears to the attention of French government officials.

It has been learned from French sources that Etienne Flandin, Minister of Commerce, is aware of the concern with which the American State Department as well as the American automobile industry looks upon the tariff plans just disclosed. American automobile officials in Paris have been engaging in informal conferences, and there is considerable talk of reprisals should the new tariff go into effect. The new tariff bill, which would raise the duty on all vital automobile parts three or four times the present rates, is expected to be introduced in the Chamber of Deputies soon after the new year's recess, which ends Jan. 14.

A second bill, which is said to be in the hands of the printer, is believed to ask an increase in the present ad valorem duty of 45 per cent to a specific duty of nearly 90 per cent. This bill would apply to parts for assembly as well as replacement.

## French Exports Show Gain

PARIS, Dec. 24 (*Special*)—French passenger car, truck and tractor exports for the first nine months of 1929 were numerically up 16.9 per cent over the corresponding period of 1928. The total was 30,773 passenger cars and 7008 trucks and tractors. The greatest volume of business was done with Algeria, which absorbed 6743 passenger cars and 1290 trucks and tractors. Spain followed, the others in order of importance being Belgium, Tunisia, Morocco, Indo-China, England, Switzerland and Denmark.

Automobile imports into France during the nine months increased from 7115 in 1928 to 7685 in 1929. There was a drop in passenger cars from all countries, but this was more than compensated for by increased truck imports from the United States.

## Reports Sales Increase

LONDON, Jan. 7—At the annual meeting of the British Goodrich Rubber Co., Sir Walrond Sinclair reported continued increase in sales throughout each department despite unsettled economic conditions, in the face of the most intensive competition the tire department has ever experienced. Although conditions are becoming more difficult, sales volume during the past 10 weeks has been maintained in comparison with the corresponding period of 1928, he said.

## Ruxton Cars Priced

NEW YORK, Jan. 8—Ruxton front-wheel-drive sedan and roadster models were shown at the New York National Automobile Show priced at \$4,500 f.o.b. St. Louis.

## Keys is Presented Guggenheim Prize

NEW YORK, Jan. 7—A check for \$100,000 covering the grand prize in the Safe Aircraft Competition of the Daniel Guggenheim Fund for the Promotion of Aeronautics was presented yesterday to C. M. Keys, president of the Curtiss-Wright Corp. and the Curtiss Airplane and Motor Co., whose plane, the Curtiss Tanager, won the competition sponsored by the fund. The presentation was made by Captain Emory S. Land, vice-president of the fund, and was made at Mitchel Field, Long Island, the scene of the tests for the Guggenheim prize.

Both before and after the presentation, which was made as the two men stood in front of the winning plane, Lieutenant Stanley M. Umstead, army pilot, who has been one of the test pilots for the fund, flew the winning entry. More than 300 persons attended the ceremony. Among those present were Edward P. Warner, president-elect of the Society of Automotive Engineers and editor of *Aviation*, a member of the board of judges in the Safe Aircraft competition; Richard F. Hoyt, chairman of the board of the Curtiss-Wright Corp.; Giuseppe M. Bellanca, president of the Bellanca Aircraft Corp., New Castle, Del., and Captain Walter Bender, field manager for the fund.

## Bosch Has Car Radio

SPRINGFIELD, MASS., Jan. 7—The American Bosch Magneto Corp. announced and displayed for the first time during the New York Automobile Show its new Bosch automobile radio. The receiver utilizes the screen grid type of tubes, which are thoroughly sealed from outside interferences and interference from the electrical system of the car. The receiver and the cone-type magnetic speaker are contained in a small unit which is mounted out of sight behind the instrument panel. The unit is operated from the storage battery of the car.

## Bendix-Cowdrey Office Moved

FITCHBURG, MASS., Jan. 7—The Fitchburg office of the Bendix-Cowdrey Brake Tester, Inc., a division of the Bendix Aviation Corp., will be permanently closed on Jan. 18. Future transactions of the Bendix-Cowdrey organization will be carried on from South Bend, Ind., according to an announcement from F. W. Parks, vice-president of the company.

## Develops Rumble Seat Top

NEW YORK, Jan. 6—Fandango Products of New York has developed a rumble top which is entirely weather-proof and easily fitted to a car. It is unnecessary to lift the top to enter or leave the rumble seat, thus assuring constant weather protection.

## Exhaust Gases Purged of (CO) by Catalysis

NEW YORK, Jan. 6—Elimination of carbon monoxide gas from the exhausts of automobiles is promised by a newly formed corporation working on the discovery of Dr. J. C. Frazer, chairman of the Department of Chemistry of Johns Hopkins University.

Dr. Frazer's discovery is a catalyst which when placed in the exhaust of an automobile brings about the complete combustion of carbon monoxide to carbon dioxide, thus eliminating the poisonous effect at present found in exhaust fumes. Air is mixed with the exhaust gases in the exhaust chamber in the presence of the catalyst before it is emitted, thus assuring the complete combustion required.

Dr. Frazer was the discoverer of the catalyst, which is used in gas masks by the United States Navy, and is also used in mines in accident prevention and rescue work through the cooperation of the United States Bureau of Mines and the Mines Safety Appliance Co. This catalyst, however, was found unsatisfactory for combustion of carbon monoxide in exhaust fumes and Dr. Frazer developed the new catalyst for which patent protection has been sought.

## Reports Plane Production

ST. LOUIS, Jan. 7—The Curtiss-Robertson Airplane Mfg. Co. made 562 Robin monoplanes, valued at \$3,249,000, during the year 1929.

The output included 286 planes powered with Challenger or Whirlwind engines; selling at \$7,500 retail, and 276 OX-Robins, retailing at \$4,000. The peak production months were April, June and August. Sixty-eight planes were made during both April and June, while the number produced in August, following the endurance flight of the St. Louis Robin, was 69 planes. Plans for the new year call for the production of a de luxe Robin and a four-place Robin, an addition to the standard model. The new ships have wider fuselage, better visibility and automatic starters. The four-place ship, with dual control, will sell at \$8,250.

## Rolls-Royce May Suspend

SPRINGFIELD, MASS., Jan. 7—Harry C. Beaver, treasurer of Rolls-Royce of America, Inc., is reported to have sailed for England to confer with the management of Rolls-Royce, Ltd., the English parent company, reviving a rumor current here that Rolls-Royce plans to discontinue manufacturing in its American plant. Such a move has been denied by the American management, but was given wide credence by an abrupt halt in production at the Springfield plant.

## English Officials Silent

LONDON, Jan. 7 (*By Cable*)—The administration of Rolls-Royce, Ltd., has refused to confirm or deny a report that manufacture at the American plant would be discontinued.



# Men of the Industry and What They Are Doing

## General Appoints Stoller

Directors of the General Tire & Rubber Co. elected John G. Stoller as secretary of the company at the annual meeting of the board held in December. By this action Mr. Stoller is promoted to his present position from the office of assistant secretary, which he has held since 1927.



John G. Stoller

Mr. Stoller has been associated with the General Tire & Rubber Co. ever since it was established in Akron in 1915. For three years prior to that time he had been associated with William O'Neil and W. E. Fouse, now president and first vice-president respectively of the General Tire & Rubber Co., in the operation of the Western Tire & Rubber Co. in Kansas City, Mo., and came to Akron with Mr. O'Neil and Mr. Fouse. A. B. Stiller, advertising manager of the company, also came to Akron with them from Kansas City. Since 1917 Mr. Stoller has been in charge of purchases for the company. He is a graduate of Oberlin College and is a native of Galion, Ohio. His home is at 659 Paliades Ave., Akron.

## Selden Appoints Jamison

John T. Jamison has been appointed vice-president and director of the Selden and Hahn truck companies, Allentown, Pa. Mr. Jamison has had wide experience in the automotive industry, having been formerly associated with the old Bethlehem Truck Co., the Lehigh Truck Co., and the Chandler Automobile Co., Cleveland, now merged with Hupp.

## Association Appoints Babbitt

William C. Babbitt has been appointed field engineer for the Industrial Truck Assn., New York. Mr. Babbitt is a graduate of the University of Michigan and has had 10 years' experience in the management of industrial plants and in the trade association field.

## Borg & Beck Appoints Barlow

C. M. Barlow, until recently connected with the engineering department of the Willys-Overland Corp., has just been appointed assistant engineer of the Borg & Beck Co., of Chicago, a subsidiary of the Borg-Warner Corp. Mr. Barlow formerly was chief engi-

neer for the H. C. Stutz organization prior to his connection with the Willys-Overland company.

## Cadillac Appoints Porter

Hugh T. Porter has been appointed assistant general sales manager of the Cadillac Motor Co., Detroit, to direct the merchandising activities made necessary by the advent of the new Cadillac V-16. Mr. Porter entered the automobile industry in 1911 as assistant sales manager for the Locomobile Co., remaining in that position until 1915. In 1915 he became associated with Inglis M. Upperco, Cadillac distributor in New York. On two occasions, separated by a short period as an independent distributor, Mr. Porter has been general sales manager of the Upperco-Cadillac Corp.

## Auburn Appoints Nine

The Auburn Automobile Co., Auburn, Ind., has appointed the following as district sales managers, H. L. Brink, sales manager, announced:

R. M. Morris, Chicago district; R. M. MacIntyre, New England district; A. H. Campbell, San Francisco district; A. F. Davis, Omaha district; J. L. Green, New York district; J. J. Cramer, Detroit district; H. C. McVey, Dallas district, and G. E. A. Swope, Kansas City district. M. Shonitzer has been appointed body engineer of the company.

## Perfect Circle Appoints Davis

L. B. Davis has been appointed secretary of the Perfect Circle Co., Hagerstown, Ind. Mr. Davis fills the place made vacant by the resignation of L. S. Bowman, who has accepted a position as secretary of the Indiana Tax Board, Indianapolis.

## Laansma Joins M. & E. A.

J. Albert Laansma has joined the staff of the Motor and Equipment Association as director of publicity, according to an announcement issued by B. W. Ruark, executive secretary of Divisions B and C of the organization.

## Standard Appoints Wilson

Commander E. E. Wilson, formerly chief of the engine and design sections of the Bureau of Aeronautics, has been appointed vice-president and general manager of the Hamilton Standard Propeller Co., Pittsburgh.

## O'Brien Leaves Motor Wheel

Thomas T. O'Brien, of the sales division of the Motor Wheel Corp., has resigned his position as head of truck wheel sales. He has not as yet announced his plans for 1930.

## Marmon Appoints Tainsh

John Tainsh, sales manager of the Marmon Motor Car Co., Indianapolis, has been appointed



John Tainsh

assistant general sales director of the company, according to an announcement by T. E. Jarrard, general sales director. Among other appointments announced by the Marmon Co. is that of George Tenney as sales manager in place of Mr. Tainsh. Mr. Tenney was formerly field supervisor for the Atlantic section.

A. E. Hatfield has been made Atlantic section field supervisor. He was formerly New York State district representative.

## Sweet Joins Krohn

Henry W. Sweet has been appointed chief engineer of the Krohn Differential Corp., Buchanan, Mich. Mr. Sweet was chief engineer of the Brown-Lipe Gear Co., Syracuse, for 16 years after which he joined the engineering staff of the Fuller & Sons Mfg. Co., Kalamazoo, Mich. He left this connection to join the Chrysler Motor Corp.

## Peerless Appoints Geddes

R. S. Geddes has been appointed vice-president and treasurer of the Peerless Motor Car Co., Cleveland, according to an announcement by James A. Bohanan, president. Mr. Geddes has been connected with the Peerless Corp. for about three months.

## De Krafft and Davis Appointed

F. B. Davis, Jr., president of the United States Rubber Co., has announced the appointment of William De Krafft as chairman of the finance committee, effective Jan. 1. Mr. De Krafft has been for many years associated with the Baldwin Locomotive Works. Mr. Davis has also announced the appointment of Dr. W. A. Gibbons of Montclair, N. J., as director of the development department in charge of all research work.

## Chaffe Joins Central

W. H. Chaffe, formerly of the Chrysler organization, has been added to the executive force of the Central Body Co., Connorsville, Ind.

## Kublin Joins Auburn

George H. Kublin has joined the sales force of the Auburn Automobile Company.

## Franklin Dealers View Plane With Car Engine

NEW YORK, Jan. 6—A Waco bi-plane equipped with a Franklin air-cooled automobile engine was unveiled at the annual luncheon given by the Franklin Automobile Co. and attended by some 500 of its dealers at the Commodore Hotel here today. J. E. Williams, vice-president in charge of sales, who presided at the event, announced that the automobile engine had furnished the power for the airplane in flights first made Dec. 26 at the Municipal Field, Dayton, Ohio, and extended since to a total of two hours.

H. H. Franklin, president of the company, in a cablegram of greeting to the dealers from San Rimo, Italy, hailed the flights, which were made only for experimental purposes, as significant of the similarity in principle between the Franklin automobile engine and the air-cooled engines used by leading makers of aircraft. Mr. Franklin is expected to arrive in this country in about a week.

The speakers at the luncheon included E. A. Johnson, president of the Johnson Flying Service Co., Dayton, who conducted the experimental flights; William B. Stout, head of the Stout Air Lines; "Cannonball" Baker, test driver of automobiles, and Dr. Edward Cattell, economist and statistician, of Philadelphia.

Mr. Johnson expressed praise for the performance of the automobile engine during the aviation test. He explained that the engine has been lifted directly from a Franklin automobile and installed in a plane with little difficulty, the crankshaft having been connected directly with the shaft leading to the propeller.

A brief outline of the progress in aircraft development was made by Mr. Stout, who pointed out a number of particulars in which the aviation industry has profited by experimental work done in the automobile industry, among them the internal combustion engine principle, certain features in interior decoration, pneumatic tires and wire wheels. He pointed out as contributions made by the aviation industry to the automobile industry, conversely, finishes now used for automobiles and the balloon tire. He remarked that the importance of lightness in weight long recognized by aircraft makers was just gaining recognition by automobile makers and he expressed praise for the long-maintained Franklin principle of "keeping the weight down."

### Alabama Orders Trucks

BIRMINGHAM, Jan. 8—The Alabama highway department has placed an \$80,000 order for trucks. Twelve trucks to cost \$38,000 were ordered through the Birmingham agency of the White Motor Co. and 15 trucks valued at \$42,000 were ordered from the Hug Alabama Truck Co. through its Birmingham agency. The orders call for immediate delivery. More than a score of bids were submitted.

## Electric Braking Device is Patented

LONDON, Dec. 31—A new device for applying automobile brakes electrically with the expenditure of little more current than is used in sounding a horn has been patented by two Birmingham street car employees. The new device, it is said, permits the existing brake shoes to be applied more efficiently than by foot or hand by current drawn from the lighting batteries.

## Continental Passes Dividend

DETROIT, Jan. 6—The regular quarterly dividend of 20 cents due on Continental Motors Corp. stock has been omitted. In announcing the omission of the dividend, Ross W. Judson, president of the corporation, said:

"As a result of the unsatisfactory operating profits of the last quarter of the corporation's fiscal year, reflecting the unsettled conditions in the motor car industry, the directors have decided to omit the dividend due at this time because of the policy that dividends are not to be paid unless earned.

"Our policy is to preserve the strong cash and asset position of the corporation which keeps it in a position to take care of all future business. Continental enters its new fiscal year with no preferred stock, no bank loans, no funded debt and an improved outlook for its future."

## Get Silentbloc Licenses

NEW YORK, Jan. 6—Charles A. Viriot, director-general of the Etablissements Repousseau, Paris, and vice-president of Silentbloc, Inc., has announced that the General Motors Corp. and Chrysler Motors have acquired licenses for Silentbloc rubber bushings. Arrangements have been made with the Firestone Rubber Co. and the Manhattan Rubber Co. for the manufacture of "adherite," the rubber component of the bushing, according to M. Viriot. An office has been opened by M. Viriot in the General Motors Building, Detroit.

### G. M. A. C. Forms Subsidiary

NEW YORK, Jan. 6—General Motors Acceptance Corp. has organized a subsidiary under the name of General Motors Acceptance Corp. of South America to handle the financing of sales in the South American territory. The new company is incorporated in Delaware with a capital of \$100,000.

### Polish Car Plant Opens

PHILADELPHIA, Jan. 6—The new plant of the Oswiecim Machinery & Automobile Co. at Oswiecim, Poland, began operating on Dec. 9, according to the Central European Observer. The company is a branch of the well-known Czecho-Slovak engineering concern, the Ceskomoravska-Kolben-Danek, Prague.

## Biggers Sees European 1930 Shipments Increase

NEW YORK, Jan. 8—That America has little to fear from attempts to restrict the importation of American automobiles into European countries and that 1930 will see an increase in the valuation of motor cars shipped abroad are the conclusions of John D. Biggers, vice-president of the Graham-Paige International Corp., made known today after an European investigation.

"In nearly every country of Europe," said Mr. Biggers, who returned from abroad in time for the New York automobile show, "there is some talk of an organized effort to combat the increasing importation of American cars, but so far very little success has marked the endeavors of any organization backing these movements. I doubt the possibility of their ever inducing the peoples of their respective countries to discontinue the buying of our cars, because Europeans—although they do not openly concede the superiority of American cars to their own makes—recognize the outstanding qualities of performance and design of cars made in the United States.

"The 1930 outlook is promising, not only for Europe but throughout the world. Manufacturers will export a larger percentage of their production than ever before. Figures for 1929 show that 11 per cent of passenger cars built in this country have been exported. Although I expect no substantial gain in the number of units shipped overseas during 1930, because of the slow start at the first of the year, I do believe that their valuation will be greater.

"Graham-Paige during the last year exported 14 per cent of its total production and will exceed that ratio in 1930," Mr. Biggers added. "We have obtained excellent results, especially in such markets as Europe, Argentina, Australia, New Zealand, Dutch East Indies, India, China, Japan, Mexico and the Central American countries. It is my firm belief that in no more than two of these countries will we see even a slight decrease during 1930."

## Engineers Hear Denham

NEW YORK, Jan. 7—Athel F. Denham, field editor of *Automotive Industries*, spoke on "Trends in Chassis Design" at a meeting of the Metropolitan Section, Society of Automotive Engineers, held at the Commodore Hotel here last night. Other speakers on the program were Harold Blanchard, technical editor of *Motor*; Otto Lucas, of the Studebaker Corp. of America, and L. Clayton Hill, of Dietrich, Inc.

### Building Racing Plane

NEW ORLEANS, Jan. 6—A racing airplane of unusual design, capable of attaining a speed of 300 m.p.h., is being constructed by the Wedell-Williams Air Service, Inc., according to press dispatches. The designers of the new plane were Harry P. Williams and James P. Wedell. The plane will have a 180-hp. Hispano-Suiza engine.



# New York Show Brings Many Price Changes

## Graham Prices Announced on Two Series of Cars

NEW YORK, Jan. 7—New prices for all sixes and eights were announced here today by the Graham-Paige Motors Corp. Two new chassis models, the three-speed Standard eight and the four-speed Special eight, introduced at the opening of the New York automobile show, take their places in the field of eight-cylinder cars priced between \$1,400 and \$1,600. The lowest priced model of the line is the Standard six two-door sedan at \$895. A new body model on the same chassis, a two-window four-door town sedan, is \$945. Factory list prices follow:

Standard Six (3-speed, formerly "612")	
Sedan, 5-pass., 4-door .....	\$995
Coupe .....	965
Coupe with rumble seat .....	995
Roadster .....	995
Phaeton .....	1,015
Cabriolet .....	1,065

Special Six (4-speed, formerly "615")	
Sedan, 5-pass., 4-door .....	\$1,225
Sedan, 5-pass., 2-door .....	1,125
Coupe .....	1,195
Coupe with rumble seat .....	1,225
Roadster .....	1,225
Phaeton .....	1,245
Cabriolet .....	1,295

Standard Eight (3-speed)	
Sedan, 5-pass., 4-door .....	\$1,445
Coupe with rumble seat .....	1,445

Special Eight (4-speed)	
Sedan, 5-pass., 4-door .....	\$1,595
Coupe with rumble seat .....	1,595

Custom Eight (127-in. wheelbase, formerly "827," 4-speed)	
Sedan, 5-pass., 4-door .....	\$2,025
Coupe, 4-pass. ....	2,025
Coupe, 2-pass. ....	2,225
Roadster .....	2,225
Cabriolet .....	2,245
Phaeton .....	2,295

Custom Eight (137-in. wheelbase, formerly "837," 4-speed)	
Sedan, 5-pass., 4-door .....	\$2,455
Town sedan .....	2,455
Sedan, 7-pass. ....	2,525
Limousine .....	2,595
LeBaron limousine sedan .....	2,540
LeBaron limousine .....	2,800
LeBaron town car .....	2,625

## G.M. Plants Resuming

FLINT, MICH., Jan. 7—Plants of the Buick and Chevrolet companies are resuming production this week, it has been announced. Fisher Body plant No. 1, supplying the Buick Motor Car Co., reopened Jan. 2 as did several subsidiary plants of both Buick and Chevrolet.

An announcement from Charles S. Barth, vice-president and operations manager of Chevrolet, said that 11,000 of the normal force of 14,000 workers are expected to be placed on a five-day schedule by the end of the week, after months of work on a short schedule basis.

## Franklin Prices Raised on New Lines Offered

NEW YORK, Jan. 4—H. H. Franklin Manufacturing Co. announced prices today on its new 145 and 147 lines in connection with the opening of the show. Prices on these two lines are just \$100 higher than those on the old 135 and 137 lines which they replace. The old 130 line which was sold last year has been discontinued. Comparative prices on the new and old lines follow:

Body Model	New Prices	Old Prices
<b>Series 145</b>		
Pursuit .....	\$2,750	.....
Coupe .....	2,610	\$2,510
Convertible Coupe .....	2,710	2,610
Vic. Brougham ..	2,695	2,595
Club Sedan .....	2,675	.....
De Luxe Sedan ..	2,760	.....
Sedan .....	2,585	2,485
Town Sedan .....	2,725	2,625
<b>Series 147</b>		
Roadster .....	2,885	Runabout 2,785
Touring, 5-p. ....	2,885	2,785
Touring, 7-p. ....	2,970	2,870
Speedster .....	3,425	3,375
Sedan 5-p. Salon	.....	.....
Special .....	2,715	.....
Sedan, 7-p. ....	2,875	2,775
Limousine .....	3,070	2,970
Sedan Limousine ..	3,125	3,050
Town Car .....	.....	5,100
<b>Series 137</b>		

## Chevrolet Lowers Prices on Improved 1930 Models

NEW YORK, Jan. 6—Price reductions ranging up to \$35 were announced by the Chevrolet Motor Co. coincident with the initial showing of its new 1930 models which, in addition to body and chassis improvements, are now regularly equipped with four Delco-Lovejoy hydraulic shock absorbers and dash gasoline gage. The new price schedule follows:

	New Prices	Old Prices
Roadster .....	\$495	\$525
Phaeton .....	495	525
Sport Roadster .....	525	...
Coach .....	565	595
Coupe .....	565	595
Sport Coupe .....	625	645
Club Sedan .....	625	...
Sedan .....	675	675
Sedan Delivery .....	595	...
Light Delivery Chassis .....	365	400
1½-Ton Chassis .....	520	545
1½-Ton Chassis with Cab ..	625	...

## Thompson Plans Stock Issue

CLEVELAND, Jan. 7—A special meeting of stockholders of Thompson Products, Inc., has been called for Jan. 13 to vote on the creation of 300 shares of common stock, no par value, to take the place of the present Class A and Class B shares. The outstanding shares will be exchanged on a share for share basis.

## Elcar Increases Prices on Two Series of Cars

NEW YORK, Jan. 5—Passenger car price increases on certain Elcar models, ranging from \$100 to \$200, were announced at the opening of the annual New York show here yesterday by F. B. Sears, president and general manager of the Elcar Motor Co. The new and old price lists follow:

	New Prices	Old Prices
<b>75-A Series</b>		
5-Passenger Sedan .....	\$1,295	\$1,195
5-Passenger Club Sedan ..	1,295	1,095
4-Pass. Convertible Landau ..	1,265	1,165
2-P. Coupe without Rumble ..	1,245	1,145
4-Passenger Coupe .....	1,265	1,165
4-Passenger Roadster .....	1,245	1,145
2-Passenger Roadster .....	995	995
<b>95 Series</b>		
5-Passenger Sedan .....	1,595	1,495
5-Passenger Club Sedan ..	1,595	1,395
4-P. Convertible Landau ..	1,565	1,465
2-P. Coupe without Rumble ..	1,545	1,445
4-Passenger Coupe .....	1,565	1,465
4-Passenger Roadster .....	1,535	1,435
2-Passenger Roadster .....	1,395	1,295
<b>96 Series</b>		
5-P. Princess Sedan .....	1,695	.....
5-P. Fleetwing Sedan .....	1,695	1,695
5-Passenger Club Sedan ..	1,695	.....
2-P. Coupe without Rumble ..	1,645	1,645
4-Passenger Coupe .....	1,665	1,665
4-P. Convertible Landau ..	1,665	1,665
4-Passenger Roadster .....	1,635	1,635
<b>120 Series</b>		
7-Passenger Sedan .....	2,645	2,645
5-Passenger Sedan .....	2,465	2,465
5-Passenger Touring .....	2,465	2,465
<b>130 Series</b>		
7-Passenger Sedan .....	2,120	.....
5-Passenger Sedan .....	1,995	.....
5-Passenger Club Sedan ..	1,995	.....
2-P. Coupe without Rumble ..	1,945	.....
4-Passenger Coupe .....	1,995	.....
4-P. Convertible Landau ..	1,995	.....
4-Passenger Roadster .....	1,995	.....
5-Passenger Touring .....	1,995	.....
<b>140 Series</b>		
5-Passenger Sedan .....	2,645	.....
5-P. Convertible Sedan .....	2,750	.....
4-P. Convertible Landau ..	2,645	.....
4-Passenger Roadster .....	2,645	.....

## Stout on S.A.E. Program

NEW YORK, Jan. 7—Three papers by important aeronautical men are scheduled for the first Southern aeronautical meeting of the Society of Automotive Engineers to be held at the Columbus Hotel, Miami, Fla., Jan. 14. J. M. Eaton, general traffic manager of Pan-American Airways, Inc., will present a paper on "The Important Part Played by Equipment and Operations in the Financial Success of International Air Lines."

Clarence M. Young, assistant Secretary of Commerce for Aeronautics, will read a paper on "The Problems of International Flying"; and William B. Stout, president, Stout Air Services, Inc., on "Aviation and Foreign Relations." Lieut. Carl B. Harper, U.S.N., will be chairman of the meeting.



# Announcements Show General Upward Trend

## Hudson Prices Reduced; Essex Group Raised

NEW YORK, Jan. 4—Decreases in factory list prices in the new Hudson "Great Eight" cars, ranging from \$25 to \$350, and price increases in the new Essex "Super Six" series, ranging from \$25 to \$190, were revealed in the introduction of the new products of the Hudson Motor Car Co. at the Automobile Show here today. The price revisions accompany and correspond with changes in the wheelbase length. Prices of the present Hudson line with 119-in. wheelbase are shown as compared with the former line having a wheelbase of 122 in.:

	New Prices	Old Prices	Decrease
Phaeton .....	\$1,300	\$1,350	\$50
Roadster, 2-4-p. .	1,200	1,250	50
Coupe, 2-4-p. . .	1,100	.....	..
Coach .....	1,050	1,095	45
Sedan, 4-door .. .	1,150	1,175	25
Sun Sedan .....	1,335	.....	..

Following are prices of the present Hudson line with 126-in. wheelbase compared with former 139-in. wheelbase:

	New Prices	Old Prices	Decrease
Phaeton .....	\$1,500	\$1,600	\$100
Touring Sedan .. .	1,250	.....	..
Brougham .....	1,295	.....	..
Sedan, 4-door .. .	1,650	2,000	350

Following are prices of the present Essex line with 113-in. wheelbase as compared with former line having 110½-in. wheelbase:

	New Prices	Old Prices	Increase
Phaeton .....	\$925	\$735	\$190
Roadster .....	925	850	75
Coach .....	765	735	30
Coupe, 2-pass. ....	735	695	40
Brougham .....	895	.....	..
Standard Sedan .. .	825	795	30
Touring Sedan .....	875	.....	..
Sun Sedan .....	995	.....	..
Coupe, 2-4-pass. ....	750	725	25
Convertible Coupe. .	.....	895	..
Town Sedan .....	.....	850	..

## Olds Dealers to Meet

DETROIT, Jan. 6—It has been announced by officials of the Olds Motor Works that several hundred Oldsmobile and Viking dealers from various sections of the country will be in Lansing Jan. 22 for a dealer organization convention. The dealer gathering is an annual event in Oldsmobile circles. A feature of the gathering will be a meeting at a local theater the afternoon of Jan. 22, where a play based on the selling of Oldsmobiles and Vikings will be presented.

## Packard Increases Three Models

NEW YORK, Jan. 6—The Packard Motor Car Co. announced at the opening of the National Automobile Show that the prices on three models would be advanced on midnight of Jan. 11 by \$110

in each case. These models are the 726 sedan which will then be priced at \$2,485; the 733 sedan which will be \$2,785, and the 733 sedan limousine which will be \$2,885.

## Peerless Has Announced Prices on 3 New Series

NEW YORK, Jan. 6—New prices announced by the Peerless Motor Car Co. during the New York Automobile Show. Prices on the 6-61-A remain as previously announced:

Standard Eight	
Sedan .....	\$1,495
Coupe .....	1,495
Brougham .....	1,545
Club Sedan .....	1,545
Cabriolet .....	1,595
Master Eight	
Sedan .....	1,995
Coupe .....	1,995
Club Sedan .....	2,045
Brougham .....	2,045
Cabriolet .....	2,095
Custom Eight	
Sedan .....	2,795
Coupe .....	2,795
Club Sedan .....	2,845
Brougham .....	2,845
Sedan (7-passenger) ..	2,945
Limousine (7-passenger) ..	3,045

## Marmon Raises Prices on New Big Eight Car

NEW YORK, Jan. 6—Marmon price changes announced during the National Automobile Show by T. E. Jarrard, general sales manager of the company, were as follows:

	New Prices	Old Prices
Big Eight		
Coupe .....	\$2,850	\$2,745
Brougham .....	2,770	2,745
Club Sedan .....	2,770	2,745
Sedan .....	2,720	2,695
Sedan (7-passenger) ..	2,920	2,895
Limousine .....	3,120	2,995
8-69		
Coupe .....	1,495	.....
Convertible Coupe .....	1,610	.....
Brougham .....	1,565	.....
Sedan .....	1,520	.....
Club Sedan .....	1,565	.....
8-79		
Coupe .....	1,995	.....
Convertible Coupe .....	2,120	.....
Brougham .....	2,070	.....
Sedan .....	2,020	.....
Club Sedan 207 .....	2,070	.....

## Cadillac V-16 Priced

NEW YORK, Jan. 6—L. P. Fisher, president of the Cadillac Motor Car Co., has announced the prices of the new Cadillac V-16, f.o.b. Detroit, as follows:

Roadster .....	\$5,350
Convertible Coupe .....	5,900
5-Passenger Club Sedan ..	5,950
7-Passenger Imperial .....	6,525
All-Weather Imperial Phaeton ..	6,650
Town Brougham .....	9,500

In the complete line there are fifty models and body types, all with Fleetwood custom coach work and priced within the foregoing range.

## Oakland and Pontiac Set Lower Prices on New Cars

NEW YORK, Jan. 6—Prices on the new Oakland 8-cyl. job, which were announced at the opening of the show, show decreases of from \$70 to \$125 from the old 6-cylinder job which it replaces. The new 1930 Pontiac also shows a few reductions in price from the 1929 models, ranging generally from \$10 to \$60, according to the body panel, although the 2-door sedan is higher than last year's model by \$30. The following table shows the new prices as compared with last year's prices on the corresponding cars:

OAKLAND		
	New Prices	Old Prices
Sport Roadster .....	\$1,025	\$1,145
Phaeton .....	1,075	1,145 (sport)
Sport Coupe .....	1,115	.....
Standard Coupe .....	1,045	1,145
Sedan, 2-door .....	1,065	1,145
Sedan, 4-door .....	1,145	1,245
Special Sedan .....	1,195	1,320
Brougham .....	.....	1,195
Convertible Cabriolet .....	.....	1,265
Landau Sedan .....	.....	1,375
PONTIAC		
Sport Roadster .....	765	775
Phaeton .....	765	825
Coupe .....	745	745
Sedan, 2-door .....	775	745
Convertible Cabriolet ..	.....	845
Sedan, 4-door .....	825	845
Special Sedan .....	875	895
Sport Coupe .....	825	.....

## Jordan Prices Reduced

NEW YORK, Jan. 6—Price reductions of \$300 in the "80" line, and \$100 in the "90" line were announced by Jordan on the opening day of the New York show. These reductions make the following prices effective:

Series "80"	
Coupe .....	\$1,795
Sedan .....	1,795
Series "90"	
Playboy roadster .....	\$2,595
Speed phaeton .....	2,795
Touring .....	2,895
Convertible coupe .....	2,495
Standard coupe .....	2,295
Sedan .....	2,295
Sport sedan .....	2,595
Sedan (7-pass.) .....	2,695
Limousine .....	2,505

The Jordan line also includes the new "70" Sunshine Sedan on 120-in. wheelbase chassis at \$1,495, and the new custom built "Speedway Series" at \$5,550.

## Thompson Gets Valve Order

CLEVELAND, Jan. 7—A contract to manufacture the entire supply of valves to be used by the International Harvester Co., Chicago, during the first six months of 1930, has been received by Thompson Products, Inc., according to an announcement by C. E. Thompson.

## Exports, Imports and Reimports of the Automotive Industry for November of Past Year, and Total for Eleven Months Ending November, 1929

	Month of November		11 Months Ending November		11 Months Ending November	
	1928	1929	1928	1929	1928	1929
	Number	Value	Number	Value	Number	Value
Automobiles, parts and accessories .....	..	\$44,031,731	..	\$25,523,489	..	\$465,963,689
Electric trucks and passenger cars .....	16	30,226	16	26,520	112	147,549
Motor trucks and buses except electric (total) .....	17,209	9,616,047	11,886	6,594,475	129,773	84,594,949
Up to one ton inclusive .....	13,950	6,044,197	9,375	3,803,958	98,420	48,024,869
Over 1 and up to 2 1/2 tons .....	3,033	2,949,381	2,339	2,310,842	28,453	29,305,969
Over 2 1/2 Tons .....	226	622,469	172	479,675	2,900	7,264,111
<b>PASSENGER CARS</b>						
Passenger cars except electric (total) .....	29,684	21,733,510	13,929	10,394,995	347,383	246,852,583
Low price range \$1,000 inclusive .....	20,217	10,202,491	8,913	4,427,781	267,349	143,105,689
Medium price range \$1,000 up to \$2,000 .....	8,467	9,216,390	4,449	4,671,773	69,530	78,190,810
High price range over \$2,000 .....	1,000	2,314,629	567	1,295,441	10,494	25,547,733
<b>PARTS, ETC.</b>						
Parts, except engines and tires .....	..	4,335,691	..	3,940,650	..	58,020,827
Automobile unit assemblies .....	..	7,014,301	..	3,855,746	..	55,452,600
Automobile parts for replacement (n.e.s.) .....	..	782,916	..	502,662	..	8,465,262
Automobile accessories .....	..	626,243	..	576,199	..	6,629,796
Automobile service appliances (n.e.s.) .....	..	35,066	..	40,150	..	357,845
Trailers .....	71	76,385	71	367,709	776	1,604,210
Airplanes, seaplanes and other aircraft .....	8	50,420	34	242,575	148	1,139,902
Parts of airplanes, except engines and tires ..	..	..	..	..	..	..
<b>BICYCLES, ETC.</b>						
Bicycles .....	659	16,674	1,302	14,898	4,728	125,355
Motorcycles .....	1,384	305,370	962	241,403	17,369	4,025,187
Parts and accessories, except tires ..	..	142,152	..	96,282	..	1,380,836
<b>INTERNAL COMBUSTION ENGINES</b>						
Stationary and Portable						
Diesel and Semi-Diesel .....	19	92,870	56	..	906	1,072,538
Other stationary and portable:						
Not over 10 hp. ....	3,555	293,501	2,299	211,124	35,838	3,029,160
Over 10 hp. ....	119	162,348	262	160,922	4,591	1,913,048
Automobile engines for:						
Motor trucks and buses .....	467	103,480	220	24,310	15,651	1,569,886
Passenger cars .....	3,002	415,560	1,680	184,131	102,693	10,860,033
Tractors .....	1	750	10	5,761	636	211,283
Aircraft .....	30	80,671	14	76,839	162	571,934
Accessories and parts (carburetors) ....	..	233,492	..	298,416	..	3,232,100
<b>IMPORTS</b>						
Automobiles and chassis (dutiable) .....	68	162,565	69	104,140	499	1,105,212
Other vehicles and parts for them (dutiable)	..	50,666	..	38,808	..	562,181
<b>REIMPORTS</b>						
Automobiles (free from duty) .....	33	33,955	20	39,177	248	272,919

## Mich. Registrations Drop

DETROIT, Jan. 6—New passenger car registrations in Michigan in November, 1929, totaled 6130 as compared with 9938 for November, 1928, and with 11,893 in October, 1929. November was the first month during which registrations dropped below those of the corresponding month in 1928. The total for the first 11 months of 1929 is 245,008, or 56,452 in excess of the entire year 1928, a gain of nearly 30 per cent. Ford registrations totaled 2472, which was slightly more than 40 per cent of the total for all makes. In November, 1928, Ford registrations totaled 3513, or slightly more than 35 per cent of all makes. Chevrolet, Hudson and Marmion reversed the general trend in November by showing gains over the corresponding month of 1928. Chevrolet registrations November, 1929, were 1271 as compared with 987 in November, 1928.

## Crude Rubber Active

NEW YORK, Jan. 6—The crude rubber market closed last week with a substantial buying interest which, however, was somewhat lower than that recorded during the earlier part of the week. Heavy shipments from Malaya and Ceylon during December with increasing stocks in London contributed toward recession which followed New Year's Day. Stocks in London increased during the week to 54,260 tons. Liverpool stocks also increased to 19,059 tons. Total arrivals of crude rubber at all

ports of the United States during December are estimated at 41,900 tons, and arrivals during the first three days of January are placed at 200 tons.

## Soviet Plant Retarded

NEW YORK, Jan. 6—Construction of the automobile plant at Nizhni Novgorod, U.S.S.R., which is to have an annual capacity of 140,000 units of the Ford type, has been reported as progressing at an unsatisfactory rate. The Metalstroy (Metal Construction Co.) failed to meet its obligations with reference to construction of branch lines and housing necessary for this building and has delayed the erection of this plant. Measures are being taken to speed up work in order to meet the schedule outlined in the five-year economic program.

## Amtorg Orders Reported

NEW YORK, Jan. 6—The Amtorg Trading Corp. placed orders for shipment of goods to the Soviet Union during the calendar year of 1929 amounting to \$94,500,000. Orders for agricultural machinery, a large amount of which was for tractors and automotive equipment, amounted to \$34,500,000. Other orders for automotive equipment totaled \$8,750,000.

## Sikorsky Plans Giant Planes

STRAFFORD, CONN., Jan. 6—The Sikorsky Aviation Corp. has announced plans for the construction of two four-engine, 41-passenger amphibian monoplanes for the Pan-American Lines.

## Airway Mileage Reported

WASHINGTON, Jan. 6—More than 16,000,000 miles were flown by the combined air services of the United States during 1929 as against 10,673 in 1928, according to Clarence M. Young, assistant Secretary of Commerce. Passengers carried were 85,000 compared with 49,000 for 1928. Mail transported on schedule reached a total of 8,000,000 lb. compared with 4,000,000 lb. in 1928. Established airway mileage increased to more than 35,000 miles as compared to the 16,000 in effect at the end of 1928, Mr. Young reported.

## A.A.A. Appoints Pillsbury

NEW YORK, Jan. 7—Arthur Pillsbury, of Los Angeles, has been appointed to fill the vacancy caused by the recent resignation of Val Haresnape, former secretary of the American Automobile Association Contest Board. Mr. Pillsbury has been a member of the Contest Board and has been active in racing affairs on the Pacific Coast. He will be assisted by T. E. Allen, formerly field man for the A.A.A.

## Alabama Orders Tractors

BIRMINGHAM, Jan. 6—The Southern Tractor Co., Birmingham, has been awarded a contract by the Alabama highway department for eight crawler type tractors. Other equipment ordered includes 17 graders from the Alabama Equipment Co., Birmingham, and eight one-man patrol graders to be furnished by the Galion Iron Works, Galion, Ohio.



## Erskine and Hoffman See Good Studebaker Year

NEW YORK, Jan. 5.—The Studebaker Corp. of America unfurled its slogan for the year, "1930 Will Reward Fighters," before 1400 distributors and dealers in the Commodore Hotel ballroom here last night at the annual banquet given by the corporation to its "family" of retailers. The banquet marked the opening of the seventy-eighth year the corporation has been in business.

Presiding at the banquet was Paul G. Hoffman, vice-president in charge of sales, who emphasized the motto of the corporation in his speech as essential to the successful merchandising of automobiles under economic conditions that prevail in 1930. Mr. Hoffman refused to be pessimistic, however, as to the prospects of the Studebaker Corp. for 1930, announcing that instead of the 450,000 car market satisfied by it in 1929, it should have a market for 1,500,000 cars in 1930 largely through increased sales of the Dynamic New Erskine.

Albert Russel Erskine, president of the corporation, reiterated the possibilities that the organization's increased market coverage held forth. He also declared that Studebaker was giving greater car value, made possible largely by the completed consolidation of the corporation's plants in South Bend, Ind., and the reduction thereby to a minimum of its cost of doing business. Best wishes of the American Automobile Association for the continued success of the corporation were expressed by Ernest N. Smith, executive vice-president of the association.

## Ford Dealers Report \$20,000,000 in Orders

DETROIT, Jan. 6.—With orders aggregating \$20,000,000 booked with Ford dealers on the first day of the showing of the new body types, the Ford Motor Co. is gearing its plants to step-up production as rapidly as possible to take care of the nation-wide demand, according to a statement from the company today.

"We were convinced that the purchasing power of the American people had not been impaired when we selected Dec. 31 as the introductory date," the statement said. "Reports from dealers in every section of the United States indicate that business conditions are even better than they had anticipated."

Based upon definite reports from a little over half the dealers of the United States, the Ford Motor Co. estimated today that over 4,000,000 persons attended the first day's showing. This attendance, it was pointed out, is equivalent to about one-fifth of the total number of passenger car owners in the country. The figures made public today do not include the attendance or sales since last Tuesday, the first day of the showing.

In some sections of the country attendance was substantially curtailed

by weather conditions. The Ford branch in North Dakota, for instance, reported that 80 per cent of the roads were blocked in its territory and that the 55,637 persons who visited showrooms in that section were residents of towns in which dealers were located.

## Indian Motorcycle Plans to Market New Engine

SPRINGFIELD, MASS., Jan. 6.—The Indian Motorcycle Co. has produced the first of its new outboard motors, known as the "Silver Arrow" a Class B product, redesigned from the Hartford "Sturdy Twin," of which manufacturing rights were acquired recently from the Gray & Prior Machine Co. of Hartford. The new unit is said to have easy starting as one of its merits, and to show a 25 per cent increase of power over the Hartford product. The ignition system has a Bosch flywheel magneto.

The company will exhibit at the Motorboat Show in New York and will market the new product through its regular dealer organization as well as through other distributors. The company feels that this is a product which its organization is specially adopted to produce owing to its long experience in the manufacture of small air-cooled engines.

A new model of its four-cylinder motorcycle, known as the 402, is also to be marketed the coming season. This is a development of the Ace motorcycle which was taken over by the Indian company a couple of years ago and last year was marketed as the 401. It has an engine of 80 cu. in. displacement, and will be both faster and more durable than the model which it supercedes, according to the manufacturer. The manufacture of automobile accessories by the company has been discontinued.

## Hamilton Acquires License

PITTSBURGH, Jan. 7.—The Hamilton Standard Propeller Corp. has announced that it has acquired the foreign rights for the Lightner-Watts propeller, which applies the adjustable pitch feature with built-up waves fabricated with high tensile strength alloys. The engineering department of the corporation, under F. W. Caldwell, is carrying on other developments of variable pitch propellers, according to the corporation's announcement.

## Reo Has New Division

LANSING, MICH., Jan. 7.—Establishment of a speed-wagon equipment division designed to assist the dealer organization of the Reo Motor Car Co. in furthering merchandising operations in 1930 and to expand speed-wagon markets through the creation of greater vocational outlets has been announced by the assistant sales manager of the company, Carl Parker.

## Business in Brief

Written by the Guaranty Trust Co., New York, exclusively for AUTOMOTIVE INDUSTRIES.

NEW YORK, Jan. 8.—Sales of seasonal goods were retarded last week by the comparatively warm weather. Retail trade in general was fair, while wholesale and jobbing lines were more optimistic. The volume of orders placed for delivery during the first quarter of the year was from fair to good. Collections are not satisfactory in many branches of trade.

## DEPARTMENT STORE SALES

Sales of New York City department stores during the first 24 days of December were about 2 per cent above those in the corresponding period in 1928, according to a report.

## FREIGHT CAR LOADINGS

Railway freight loadings for the week ended Dec. 21 amounted to 842,483 cars, which marks a decrease of 58,137 cars below those a year ago but an increase of 12,673 cars above those two years ago.

## FISHER'S INDEX

Professor Fisher's index of wholesale commodity prices for the week ended Jan. 4 stood at 93.0 as compared with 93.1 a week earlier and 92.8 two weeks earlier.

## BANK DEBITS

Bank debits to individual accounts outside of New York City for the week ended Dec. 31 were 29 per cent below those in the corresponding week last year.

## STOCK MARKET

The stock market last week showed a rising tendency, but the volume of trading was on a small scale. There was a downward reaction in the latter part of the week, but most issues closed the week with net gains. Call money ranged from 5 to 6 per cent.

## BROKERS' LOANS

Brokers' loans in New York City for the week ended Dec. 31 increased \$96,000,000, bringing the total to \$3,424,000,000, as against \$5,330,000,000 a year earlier. Loans placed for the accounts of out-of-town banks and of corporations and individuals decreased, the entire increase being contributed by loans of reporting member banks.

## FEDERAL RESERVE STATEMENT

The consolidated statement of the Federal Reserve banks for the week ended Dec. 31 showed a decrease of \$130,400,000 in holdings of discounted bills, while there were increases of \$37,300,000 in holdings of bills bought in the open market, of \$25,500,000 in holdings of Government securities and of \$35,100,000 in member bank reserve deposits. The reserve ratio on Dec. 31 was 69.6 per cent, as against 67.6 per cent a week earlier and 69.3 per cent two weeks earlier.



## Stutz Suits Dismissed; Gorrell Sees Good Year

NEW YORK, Jan. 6—E. S. Gorrell, president of the Stutz Motor Car Co., sent word Jan. 4 from Indianapolis to the company's headquarters at the New York show that the petition in involuntary bankruptcy recently filed there against the company had been dismissed from the United States District Court on the grounds that there was no evidence of insolvency. Counsel for the three local creditors of the company who filed the suit joined the attorneys for the Stutz company in requesting that the action be dismissed. Mr. Gorrell also announced that he had been assured that a suit for appointment of a receiver, filed in a state court, would also be dismissed.

In commenting on these dismissals, Mr. Gorrell said: "We are assured that all the other suits which have been filed in the state courts will be dismissed immediately, and the company, with the cooperation of all its creditors, which cooperation has been assured, will proceed with its financial reorganization. It expects to enjoy the best year's business in its history."

## F. B. Stearns Co. Dissolves

CLEVELAND, Jan. 6—Stockholders of the F. B. Stearns Co., manufacturer of automobiles since 1898, voted last week to dissolve the company and dispose of its assets. Among the assets is included \$400,000 in gold bonds of the Euclid-Stearns Realty Co. and considerable real estate. Operations of the Stearns plant was discontinued Dec. 20.

### Peugeot Plans Road Test

PARIS, Dec. 26 (*Special*)—Paris to the Niger Valley via the Sahara Desert, along the Niger Valley to Dakar on the west coast of Africa, return over the same route through Timbuctoo and Gao, a second crossing of the Sahara Desert and return to Paris, is the 9320-

## "Automotive Industries" Show Week Calendar

### CHICAGO SHOW WEEK EVENTS

Jan. 25—Studebaker Corp. Banquet. Palmer House  
Jan. 28-29—Automotive Electric Assn. Convention. Stevens Hotel  
Jan. 28—Graham-Paige Luncheon. 1:00. Palmer House  
Jan. 28—Oakland Motor Co. Banquet. 6:30. Palmer House  
Jan. 29—Willys-Overland Banquet. 6:30. Palmer House  
Jan. 29—Chrysler Sales Corp. Luncheon. 12:30. Congress Hotel  
Jan. 29—Natl. Assn. of Automobile Show & Assn. Managers Luncheon. 12:30. Stevens Hotel

mile journey about to be undertaken in an elapsed time of 30 days by four stock Peugeot automobiles.

## G.M. Forms Subsidiary

DETROIT, Jan. 6—Incorporation of the National Highway Transport Corp. as a holding company and subsidiary of General Motors Truck Co. has been announced in Pontiac, Mich., following filing of charter with the secretary of the State of Delaware. The charter states that the corporation "may deal in all kinds of motor vehicles, airplanes, flying machines, etc., and all kinds of accessories for both automobiles and planes." The capital stock is \$20,000,000 with 200,000 shares of no par value common. Incorporators are L. R. Davis, W. F. Maybury and C. F. Dick, all connected with the General Motors Truck Co. The new company is strictly a holding company and its formation will not involve new plant or other equipment, officials stated.

### Spain Has 240,000 Cars

MADRID, Jan. 6—Spain had 240,000 automobiles at the end of 1929, according to estimates from official sources. This was an increase of 38,364 during the year. Of all the automobiles in service in Spain, Madrid has 5628 and Barcelona has 6773.

## Houdaille-Hershey Gets Large Schwitzer Holding

CHICAGO, Jan. 7—A substantial interest in the Schwitzer-Cummins Co., Indianapolis, has been acquired by the Houdaille-Hershey Corp. The Schwitzer-Cummins Co. manufactures cooling fan for automobile engines, water pumps, oil pumps, superchargers and other automotive products.

The Oakes Products Corp., subsidiary of the Houdaille-Hershey Corp., has moved its equipment in Indianapolis and Detroit to its new plant at North Chicago and the Schwitzer company will take over the vacated Indianapolis plant for the manufacture of fans and general stampings. The equipment of the former Hershey Mfg. Co. in Chicago has been moved to the North Chicago plant formerly occupied by the Biflex Products Co. and the equipment of the latter company has been moved to the new Biflex plant in Decatur, Ill.

## International Opens Exhibit

NEW YORK, Jan. 6—The International Motor Co. has opened a midtown showroom at Lexington Avenue and Forty-fourth Street, New York City. This showroom occupies 16,000 sq. ft. in Grand Central Terminal Building on the ground floor and is given over to an exhibit and salesroom for Mack trucks, buses, fire apparatus and gas-electric locomotives. Norman H. Halliday is in charge of the salesroom.

### Type Tests Defended

WASHINGTON, Jan. 6—Less than 50 per cent of the new types of airplane engines tested by the Bureau of Standards up to June 30, 1929, successfully met the requirements on the first trial, the Department of Commerce has announced. The necessity of conducting type tests before the use of new types of engines in interstate commerce is demonstrated by this fact, it was said.

# Calendar of Coming Events

### SHOWS

Newark (N. J.) Automobile Show. Jan. 11-18  
Philadelphia, Automobile. Jan. 11-18  
Buffalo, Automobile. Jan. 11-18  
Milwaukee Automobile Show. Jan. 11-18  
Toronto, Automobile. Jan. 11-18  
Cincinnati, Automobile. Jan. 12-18  
Boston, Automobile. Jan. 18-25  
Detroit, Automobile. Jan. 18-25  
Baltimore, Automobile. Jan. 18-25  
Harrisburg, Automobile. Jan. 18-25  
Louisville, Automobile. Jan. 18-25  
Hartford, Automobile. Jan. 18-25  
Pittsburgh, Pa., Automobile. Jan. 18-25  
Brooklyn, Automobile. Jan. 18-25  
Montreal, Automobile. Jan. 18-25  
Louisville, Automobile. Jan. 18-25  
Rochester, Automobile. Jan. 20-25  
Nashville, Automobile. Jan. 20-25  
Wilmington, Del., Automobile. Jan. 20-25  
Chicago National Coliseum. Jan. 25-Feb. 1  
Washington, D. C., Automobile. Jan. 25-Feb. 1  
Cleveland Automobile Show. Jan. 25-Feb. 1  
Hillsdale, Mich., Automobile. Jan. 28-Feb. 1  
Copenhagen Trucks, etc. Jan. 25-Feb. 2  
Columbus, Automobile. Jan. 26-Feb. 1  
Portland, Me., Automobile. Jan. 27-Feb. 1

Wilkes-Barre, Automobile. Jan. 27-Feb. 1  
San Francisco, Cal., Automobile. Feb. 1-8  
Minneapolis-St. Paul, Automobile. Feb. 1-8  
Toledo, Ohio, Automobile. Feb. 3-8  
Wichita, Automobile. Feb. 3-8  
Cumberland, Automobile. Feb. 3-8  
Syracuse, Automobile. Feb. 3-8  
Ottawa, Automobile. Feb. 3-8  
St. Louis, Automobile. Feb. 3-8  
Cincinnati, Aircraft. Feb. 8-14  
Albany, Automobile. Feb. 8-15  
Akron, Automobile. Feb. 8-15  
Kansas City, Automobile. Feb. 8-15  
New York, American Legion, Aviation. Feb. 9-15  
Denver, Automobile. Feb. 10-15  
Indianapolis, Automobile. Feb. 10-15  
Sheboygan, Automobile. Feb. 10-16  
Mankato, Automobile. Feb. 12-15  
Peoria, Automobile. Feb. 12-16  
Providence, Automobile. Feb. 14-22  
Canton, Automobile. Feb. 15-22  
Omaha, Automobile. Feb. 17-22  
Copenhagen, Automobile. Feb. 21  
Los Angeles, Automobile. Feb. 22-March 2  
Camden, N. J., Automobile. Feb. 24-Mar. 1  
Des Moines, Automobile. Feb. 24-Mar. 1  
Seattle, Wash., Automobile. Feb. 25-Mar. 2  
Detroit (All-American Aircraft). April 5-13  
Asbury Park, N. J., Automobile. April 7-12

### CONVENTIONS

American Road Bldrs. Assn., Atlantic City. Jan. 11-18  
Equipment for Motor Trucks, Inc., Atlantic City (during road show). Jan. 15  
American Institute Electrical Engineers, New York. Jan. 27-31  
National Automotive Dealers Association, Chicago. Jan. 27-28  
Ohio Assn. of Commercial Haulers, Cleveland. Jan. 30-31  
Southwest Road Show and School, Wichita. Feb. 25-28  
American Society for Testing Materials, Regional Meeting, Detroit. Mar. 19  
American Society Mechanical Engineers, Fiftieth Anniversary Celebration: New York. April 5  
Hoboken, N. J. April 7  
Washington, D. C. April 8-9  
American Railway Association, San Francisco. June 23-26  
S. A. E. Annual Meeting, Detroit. Jan. 21-24  
SALONS  
Hotel Biltmore, Los Angeles. Feb. 8-15  
Palace Hotel, San Francisco. Feb. 22-Mar. 1